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SWAZILAND

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE
LIBRARY
-7 MAY 1953

ANNUAL MEDICAL & SANITARY REPORT

FOR THE YEAR 1952

H.C.P. 724

S W A Z I L A N D.

ANNUAL MEDICAL AND SANITARY REPORT

FOR THE YEAR 1952.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE
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I. ADMINISTRATION.

(a) Staff.

European.

Director of Medical Services
1 Malaria Medical Officer
1 Medical Officer (Health)
5 Medical Officers
1 Intern
1 District Surgeon
1 Health Inspector
2 Hospital Assistants and Dispensers (one post in abeyance)
1 Dispenser, Storekeeper, Radiographer
12 Nursing Sisters
1 Clerk
1 Lady Clerk and Typist
1 Lay Superintendent Leper Hospital (post vacant)
1 Laboratory Assistant
2 Handymen (one post vacant)

African.

1 Medical Officer (from 1st January, 1953)
1 Senior Hospital Assistant
2 Hospital Assistants
1 Dispenser
48 Nurses
2 Out-patient Attendants
2 Clerks
1 Laboratory Assistant
2 Ambulance Drivers
2 Dispensary Orderlies
21 Ward Attendants
1 Wardmaster
7 Cooks
1 Night Watchman
1 Office Messenger
2 Boiler Attendants
3 Hospital Groundsmen
16 Laundresses
2 Seamstresses
10 Malaria Assistants
1 Health Office Clerk
1 Lorry Driver
2 Orderlies (Laboratory)

Appointments and Changes in European Staff.

Name	Office or Rank	Date of	
		Appointment	Resignation
Miss J.M. van Heerden	Nursing Sister	1. 1. 52	-
Miss J.M. Marshall	Nursing Sister	10. 1. 52	-
Miss J. Harding	Nursing Sister	-	23. 1. 52
Miss A.D. Killen	Nursing Sister	-	31. 3. 52
Miss R.M. Chard	Nursing Sister	28. 3. 52	-
Mrs. D.V. Seeton	Nursing Sister	18. 9. 52	-
Miss N. Roche	Nursing Sister	31.10. 52	-
Miss P.M. Hall	Nursing Sister	-	15.11. 52

Reliefs.

Name	Office or Rank	From	To
Mrs. I. Palliser	Typist	12. 2. 52	19. 4. 52
Mrs. E.M. Willemsen	Nursing Sister	7. 4. 52	21. 5. 52
Mrs. J. Scogings	Nursing Sister	11. 4. 52	29. 4. 52
		24.11. 52	28.11. 52
		1. 12. 52	20.12. 52
		22.12. 52	23.12. 52
		29.12. 52	30.12. 52
Miss B. Heher	Nursing Sister	22. 5. 52	18. 9. 52
Mrs H.W. Slatem	Typist	14. 8. 52	13. 9. 52

Distribution of European Medical and Nursing Staff on 31st December, 1952.

Name	Rank	Station
Dr. J.C.J. Callanan, O.B.E.	Director of Medical Services	Mbabane
Dr . H. Flack	Medical Officer	Mbabane
Dr. L.E.D.F. Joubert	Medical Officer	Mbabane
Mrs. G.M. Sivewright	Nursing Sister	Mbabane
Miss M.K. Irvine	Nursing Sister	Mbabane
Mrs. V.M. Barnard (nee Crighton)	Nursing Sister	Mbabane
Mrs. D.V. Seeton	Nursing Sister	Mbabane
Mrs. R.M. Schutte (nee Chard)	Nursing Sister	Mbabane
W. Palliser	Handyman	Mbabane
Mrs. H. Perkins	Nursing Sister	Mankaiana
Dr. O. Arnheim	Medical Officer	Hlatikulu
Dr. C. Runciman	Medical Officer	On leave
Dr. T.J. Malherbe	Medical Officer	Hlatikulu
Mr. J.L. van der Vyver	Hospital Assistant Dispenser	Hlatikulu
Miss E.H. Overton	Nursing Sister	Hlatikulu
Miss J.M. van Heerden	Nursing Sister	Hlatikulu
Miss J.M. Marshall	Nursing Sister	Hlatikulu
Miss N. Roche	Nursing Sister	Hlatikulu
Miss S. McCorkindale, M.B.E.	Nursing Sister	Goedgegun
Miss A. Martin	Nursing Sister	Hluti
Dr. O. Mastbaum	Malaria Medical Officer	Bremersdorp
Miss J. Bredell	Laboratory Assistant	Bremersdorp
Dr. A.E. Batchelor	Medical Officer (Health)	Bremersdorp
Mr. G.J. van Eeden	Health Inspector	Bremersdorp
-	Superintendent Mbuluzi Leper Hospital	In abeyance

(b) LEGISLATION AFFECTING THE MEDICAL DEPARTMENT, ENACTED DURING THE YEAR.

(a) High Commissioner's Notice No. 19 Amendment of Medical Certificate of Cause of Death.
(b) High Commissioner's Notice No. 73 Cancellation of Regulations and Conditions governing the duties of Officers of the Medical Service, etc, in Swaziland.
(c) Government Notice No. 21 Hospital Patients, - Charges and Medical Officers fees.
(d) Government Notice No. 30 Hospital Patients - Charges (Amendment).

(c) FINANCIAL.

Revenue 1952/53.

Hospital, Health Centre and other fees	£ 3725

Expenditure

Personal Emoluments	£ 35623
Travelling allowance	£ 1182
Allowances and fees	£ 390
Maintenance of patients and purchase of medicines	£ 14639
Medical Research	£ 100
Maintenance of Lepers	£ 346
Maintenance of Lunatics	£ 1501
Specialist treatment in Union Hospitals for Indigents	£ -
Hospital Equipment	£ 1895
Uniforms for African Staff	£ 625
Vaccination	£ 88
Drug Replacemant	£ -
Subsidies for Medical Services:- Church of the Nazarene Mission of South Africa £2940, Red Cross £30, RomonCatholic Mission £100, Our Lady of Sorrows School £75, Mahamba Mission £840, Catholic Mission, Stegi, £980	£ 4210
Anti-Malaria Measures	£ 2143
High Commission Territories Nursing Council, Travelling and other expenses	35
Upkeep of grounds	£ 98
Upkeep of x-ray plants	£ 35
Overseas passages	£ 726
Anti-Malaria Drugs for Sale	£
Transport on Stores	£ 1456
Transport Silicosis Cases	£ 11
Bilharzia control measures	£ 487
	£ 65590
Anti-Malaria and Public Health Campaign Scheme No. D 1084	£ 8853
Leper Hospital Scheme No. D.1017	£ 1338
Extensions to Mbabane and Hlatikulu Hospitals and African Nurses Home, Bremersdorp, Scheme No,D.1085	£ 1149
Extension of Medical Services in the Lowveld, Scheme No. D.1505	£ 1006
Total Expenditure on Medical and Sanitary Services	£ 77936
Total Revenue of the Territory	£843000
The relationship of Medical Expenditure (excluding Colonial Development and Welfare Fund Expenditure) to the total Revenue of the Territory	7.78%

II. PUBLIC HEALTH.

(I). General Diseases.

The results of the analyses of specimens collected by the Goitre Research Committee of the University of Pretoria, during their visit to the territory in August 1951 are given in the following tables (I and II):-

TABLE I.

Specimen No.	Origin	Specimen	Iodine content in p.p.m.
2	Mahlangatsha	Topsoil	3.0
3	Mahlangatsha	Subsoil	4.9
4	Mahlangatsha	Mealies	Less than 0.05 parts
6	Umzeweniriver	Mealies	Less than 0.05 parts
7	Umzeweniriver	Sugar beans	Less than 0.05 parts
9	Umzeweniriver	Topsoil	3.1
11	Goedgegun	Topsoil	5.4
12	Goedgegun	Subsoil	7.5
18	Matapha School	Topsoil	5.0
19	Matapha School	Subsoil	8.7
21	Mbuluzi School	Topsoil	2.2
22	Mbuluzi School	Subsoil	2.4
23	Mbuluzi School	Veldgrass	0.9

TABLE II. ANALYSIS OF WATER, SOIL AND GRAIN SPECIMENS.

Specimen No.	1	5	10	13	14	15	16	17	20	24	25
Origin	Mahlangatsha	Umzeweni-river	Goedgegun	Mantambi-river	Mhlotsheni	Hlatikulu	Mtilwane river	Bremersdorp	Umbuluzi School	Tap water Mbabane	Spring water Mbabane
Colour	None	None	None	None	None	None	None	None	None	None	None
Smell	None	None	None	None	None	None	None	None	None	None	None
Turbidity	None	None	None	None	None	None	None	None	None	None	None
Sediment	None	Slight	Slight	Slight	None	Slight	None	None	None	None	None
pH at 20°C	7.1	7.2	8.7	8.4	7.2	6.8	6.5	7.2	7.5	7.2	7.1
Dionic conductivity at 20°C.	140	44	80	39	48	70	95	135	18	21	30
PARTS PER MILLION PARTS OF WATER.											
Solids (105°C)	107	37	75	42	40	68	99	104	24	26	30
Sodium (Na)	15	10	23	14	6	9	16	28	7	12	10
Calcium (Ca)	6	6	3	3	8	14	3	8	3	3	Nil
Magnesium (Mg)	12	Nil	Nil	Nil	Nil	Nil	7	4	Nil	Nil	Nil
Na.bicarbonate	17	8	29	13	8	34	25	15	4	20	17
Na.carbonate	Nil	Nil	11	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Salt ammonia	Nil	0.02	Nil	Nil	Nil	Nil	Nil	0.25	Nil	Nil	0.03
Protein ammonia	0.04	0.13	0.06	0.09	0.04	0.05	0.04	0.15	0.05	0.13	0.10
Oxygen taken up (4 hours at 27°C)	0.29	0.13	0.71	0.50	0.46	0.21	0.08	0.29	1.30	0.42	0.25
Perm.hardness as $CaCO_3$	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Temp.hardness as $CaCO_3$	65	15	8	8	10	5	35	35	8	8	5
Nitrate (NO_3)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Nitrite (NO_3)	Neg	Neg	Neg	Neg	Neg	Neg	Neg	Neg	Neg	Neg	Neg
Chloride (Cl)	11	7	11	11	7	11	11	14	7	7	7
Sulphate (SO_4)	8	7	7	7	8	14	5	11	2	2	1
Carbonate (CO_3)	Nil	Nil	6	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Bicarbonate (HCO_3)	92	24	31	18	18	31	61	79	12	24	18
Fluorine (F)	0.70	0.20	0.20	0.20	0.30	0.20	0.30	0.20	0.20	0.20	0.20
Iodine (I)	0.022	0.020	0.059	0.018	0.030	0.020	0.018	0.018	0.011	0.034	0.008

Iodine content of Pretoria water 0.058 p.p.m.

It will be noted that the iodine content of water was lowest at the Mbuluzi School at which the incidence of Goitre (71%) was greatest.

Arrangements have been made to administer sodium iodide to pupils at the following schools in weekly doses of 3.0 milligrams, and to observe the effects:-

	Pupils	% of Goitre
Hlatikulu Central School	230	21.5%
Mbabane Central School	238	42%
Swazi National School, Matapha	95	36%
Mbuluzi Girls School	211	71%

Previous indications that certain underground water supplies in the territory might contain fluorine in harmful concentrations have been confirmed by the findings, in the case of the borehole at Maloma, which are shown below, the water being entirely unsuitable for human and animal consumption.

Place	Fluorine p.p.m.
Borehole (425' deep), with artesian effect, in coarse dolerite, except for Karroo shale at bottom on Mr. I.H. Labuschagne's farm No. F.497, 1.8 miles east 35° south of Maloma Store.	40
Borehole Swaziland Irrigation Scheme (C.D.C)	0.10
Borehole Lubuka Ranch (Mr. F. Corbett)	2.80
Borehole Raleigh Fitkin Memorial Hospital, Bremersdorp	0.00
Borehole No. 1 (Veterinary) Native Area No. 27	0.04

During the course of a school survey the data shown in the following tables were obtained in connection with the incidence and distribution of endemic goitre:-

A.

Sex-Age Group	Total Exams	THYROID CASES				THYROID CASES %			
		(1)	(2)	(3)	Total	(1)	(2)	(3)	Total
M 16 +	376	99	48	9	156	23.4	12.7	1.1	41.5
F 16 +	191	46	35	27	108	24.1	18.3	14.1	56.5
M 11 - 15	764	260	119	20	399	34.0	14.3	2.6	53.5
F 11 - 15	987	345	247	109	701	35.0	25.0	11.0	71.0
M 6 - 10	363	119	56	13	188	32.8	15.4	3.6	51.8
F 6 - 10	587	219	119	20	358	37.3	20.3	3.4	61.0
	3268	1088	624	198	1910	33.3	19.0	6.1	58.7

B.

Area	Total Exams	THYROID CASES				THYROID CASES %			
		(1)	(2)	(3)	Total	(1)	(2)	(3)	Total
Highveld	865	327	200	77	604	37.8	27.7	8.9	69.8
Middleveld	1882	634	406	121	1161	33.7	21.6	6.4	61.7
Bushveld	521	127	18	-	145	24.4	3.5	-	27.8
	3268	1088	624	198	1910	33.3	19.0	6.1	58.7

The classification of thyroid enlargements adopted was as follows:-

(1) Isthmus and lateral lobes of gland can be made out but enlargement is slight. Gland not visible on swallowing.

(2) The gland fills the suprasternal hollow. Outline of neck is not convex.

(3) The neck outline is definitely convex and the patient has a thick neck.

Class (1) is regarded as of little importance as it is considered to be associated with normal growth up to the age of puberty. Both Class (1) and Class (2) show a natural tendency to regression at puberty. All parts of the highveld and middleveld are not endemic zones, as enlarged glands were found only in certain areas, the Komati valley, Forbes Reef, Mbabane, Mankaiana and Gege being the areas mainly involved.

In July, Dr. S.P. Perold, Clinical Assistant, Department of Medicine, and Dr. W. Grotepass, Department of Biochemistry of the University of Pretoria visited the territory with the object of investigating the occurrence of porphyrins in the sick and normal Bantu and their findings will shortly be made available to the Department.

In September, Drs. A.R.P. Walker, and T. Gerritsen of the Council for Scientific and Industrial Research, Human Biochemistry Unit, South African Institute for Medical Research visited several parts of the Territory for the purpose of extending their investigations into various aspects of the iron metabolism of the South African Bantu. In this connection the following general picture has been elucidated:-

(1) An unusually high iron intake is very common, this being derived principally from adventitious iron taken up in the preparation of food in iron cooking vessels, i.e. kaffir pots and paraffin tins.

(2) Elevated values for serum iron and total iron binding capacity are occasionally encountered.

(3) Hypochromic anaemia is very rare.

(4) Excessive deposits of iron are frequently seen in the tissues of adult Bantu examined at necropsy.

In seeking to determine the measure of correlation prevailing between the above observations when made in Bantu groups from different parts of South Africa, the investigators elicited information on dietary habits, cooking procedures, etc, collected samples of prepared foodstuffs, blood specimens, and samples of organs removed at post-mortem, and their report will shortly be available for publication.

In August, some 20-30 persons, in six kraals in the Kubuta area developed stramonium poisoning following the ingestion of the seeds of Datura stramonium, which were found in a consignment of imported kaffir corn. Both adults and children were involved, the former having used the kaffir corn in the form of beer, and the latter as porridge. There were no fatal cases.

In connection with the International Statistical Classification of Diseases, Injuries and Causes of Death, the Intermediate List of 150 Causes for tabulation of morbidity and mortality, modified in the manner recommended by the Medical Advisers to the Secretary of State, was brought into use in replacement of that contained in Table V of the Model Medical and Sanitary Report (Miscellaneous 375) with effect from 1st January, 1952. The Medical Certificate of the Cause of Death (Form B.M.D.8) provided under High Commissioner's Notice No. 59 of 1927 has been amended to conform with the requirements of the International Form of Medical Certificate prescribed under Article 9 of the Nomenclature Regulations 1948, as from 1st March 1952 (High Commissioner's Notice No. 19 of 1952).

(II) Communicable Diseases.

(i) Malaria. The incidence of malaria assessed on the basis of the number of cases admitted to District Hospitals fell by 37.6% as compared with 1951, despite the fact that the number of admissions at Hlatikulu during the second half of December exceeded the maximum monthly admissions figure attained at any hospital during the last three years.

During the 1951/52 transmission season 45780 huts in the low and middleveld were sprayed with residual insecticide, and 31900 in the low veld received a second application in February. The second spraying was necessitated by the fact that a wettable B.H.C. powder (10% gamma content), which has a shorter residual effect was used in substitution for D.D.T, which was in short supply. The only areas treated with the M25 (5% D.D.T) Emulsion were Herefords, Horo and the Lomati valley, where a single application sufficed. Three sprayings were necessary at the Swaziland Irrigation Scheme (C.D.C) where prolific mosquito breeding was encountered, and intensified control measures were instituted. Check spraying throughout the transmission season revealed no adult mosquitos in huts treated with D.D.T or B.H.C except in a small area north of the Komati river, close to rice paddies at Border Gate, and in some huts on the Swaziland Irrigation Scheme (C.D.C).

The parasite rates in children from all age groups from bushveld areas controlled for two and more years, and one year only were 2.1% and 20.9% respectively, as compared with 50-80% before anti-malaria measures were introduced. The 1951/52 transmission season was the first in which all accessible malarious areas in Swaziland were subjected to control. 100,000 persons were thus afforded protection, and the measures employed have so far been attended with an outstanding degree of success.

The cases of malaria treated by field and laboratory staff set out in the following table, again show a noteworthy decrease as compared with those of the previous year, and are in fact the lowest on record.

1952	Field Staff	Laboratory (x)
January	0	0
February	11	0
March	18	0
April	18	0
May	16	0
June	8	0
July	0	0
August	0	0
September	1	0
October	3	0
November	2	0
December	4	0
Total	81	0
1951	181	4
1950	798	29

(Note "x" = microscopically diagnosed.

Heavy and widespread rains occurred throughout the territory during the last quarter of the year, i.e. October 2.5", November 5.2", December 8.4", and climatic conditions being exceptionally favourable, extensive breeding of A. gambiae is taking place in many parts of the bushveld, and at the Swaziland Irrigation Scheme where rice-growing operations have greatly increased and 1400 acres are now under cultivation. In the event of the heavy rains continuing during the early part of 1953 the territory may experience a season of abnormally

heavy malaria transmission, as at no time since 1946 have conditions been so adverse from the point of view of malaria control. Hut spraying in the controlled areas was commenced early in November.

By the 3rd January 1953 there was evidence that malaria was assuming epidemic proportions on practically all European farms in the bush veld and middle veld, where numerous A. gambiae adults were recovered from native huts, e.g. in three farms in the Stegi bush veld area 464 A. gambiae were found in 36 huts, giving an average of 13 per hut. In association with the prolific breeding of malaria vectors many fresh infections have already been reported and confirmed in the laboratory, i.e. 62 fresh cases up to 3rd January 1953. These infections were almost all acquired on European farms and in middle-veld areas at Mhlotsheni and Sigwe in the Hlatikulu District which are not under control and are normally malaria free. Up to the end of 1952 no primary infections had occurred in controlled areas, though these have already been exposed to dense mosquito invasion from the uncontrolled "islands" in the vicinity of native areas.

(ii) Smallpox.

No confirmed cases of smallpox were reported during the year, and no mass-vaccination campaigns were undertaken. Ordinary routine vaccination was carried out as circumstances required, and at the Franson Memorial Bible School, Mhlotsheni, 15% of the students who were found to be unvaccinated were immunised.

The school survey provided the following information regarding the vaccinational state of African children, which may be regarded as representative of the territory as a whole:-

Table I.

Sex/Age Group	Total Examined	No. of cases vaccinated	Vaccination Percentage
M 16 +	376	318	84.6
F 16 +	191	148	77.5
M 11 - 15	764	576	75.5
F 11 - 15	987	754	76.5
M 6 - 10	363	235	64.7
F 6 - 10	587	366	62.4
	3268	2397	73.3

Table II.

Area	Total Examined	No. of cases vaccinated	Vaccination Percentage
Highveld	865	566	65.6
Middleveld	1882	1438	76.4
Bushveld	521	394	75.5
	3268	2397	73.3

The vaccinal level in the highveld is lower than in other parts of the territory, as there is a large area extending from the Komati River to Hebron in which a relatively high proportion of the children are unvaccinated. Preparations are being made to arrange for mass vaccination in this area early in 1953.

(iii) Bilharziasis.

(Hospital cases: In-patients 103
Out-patients 547)

650 cases received treatment at hospitals in 1952, as compared with the following numbers in previous years:-

1951	604 cases
1950	642 cases
1949	424 cases
1948	530 cases
1947	354 cases
1946	470 cases

The case distribution according to Districts was as follows:-

Manzini-Stegi District	49.0%
Mbabane-Mankaiana-Pigg's Peak District	34.9%
Hlatikulu District	16.0%

Preliminary investigations into the distribution of the snail hosts of Schistosoma, infectivity rates and disease incidence were completed in the Bremersdorp area and control measures were instituted in September. A second sulphation was carried out in December, and the results so far have been encouraging. The eradication of snail vectors is not being attempted, the aim being to reduce the snail population below the transmission-density.

Of 86 urines from children at the Government School 17 (19.7%) were positive, and of 69 from the Convent School all were negative. Almost all the Convent children came from places other than Bremersdorp, and 9 (53%) of the 17 cases at the Government School had already been diagnosed and treated in 1951. It is thus probable that the relapse rate in cases treated with antimony tartrate is high. The infestation rate of close on 20% in European children is extremely high in comparison with recent findings in the Eastern Transvaal, where with one exception (Lydenburg, Origstad, 17.4%) the percentage of positives ranged between 3.1 and 11.2%. 34% of African children examined during a territory-wide medical inspection of school children were found to be suffering from Bilharziasis, and 33.4 of recruits to the labour force of the Swaziland Irrigation Scheme (C.D.C) were infected.

During August further molluscan surveys were carried out in the middle and high veld, but the results have not yet been collated. Biomphalaria (Planorbis) pfeifferi, the intermediate host of Schistosoma mansoni was found in dams at Mbabane, but none of the specimens examined were found to be infected.

Laboratory experiments with Sodium Pentachlorophenate ("Santobrite") and Copper Sulphate were carried out, and the results are summarised in the following table:

	5 parts per million	15 parts per million
Copper Sulphate	80% survival rate after 18 hours	0% survival after 28 hours
Sodium Pentachlorophenate	100% survival rate after 18 hours	15% survival rate after 18 hours.
20 Physopsis snails used in each experiment.		30 Physopsis snails used in each experiment.

Dilutions of less than 5 p.p.m. of both chemicals were found to be ineffective, and it was decided that "P.C.P" had no advantages over copper sulphate in adult snail control. "P.C.P" proved to be very effective against cercariae which succumbed in 30 seconds to dilutions of 0.25 p.p.m. The effect of "P.C.P" on snail eggs remains to be investigated.

(iv) Tuberculosis (Pulmonary).

(Hospital Cases: 142 In-patients
162 Out-patients).

304 cases were dealt with at hospitals, and those treated during the past six years are shown below for the purpose of comparison:-

1951	304 cases
1950	396 cases
1949	281 cases
1948	253 cases
1947	196 cases
1946	300 cases

The case distribution was as follows:-

Manzini-Stegi District	71.7%
Mbabane-Mankaiana-Pigg's Peak District	13.8%
Hlatikulu District	14.4%

The Tuberculin Survey was continued in association with a general medical survey amongst African school children embracing most parts of the Territory. Over 3000 children were examined and 2281 tuberculin readings were recorded. From experience previously gained the second strength P.P.D or 0.005 mgm in 0.1 mil. gave too severe a reaction and in the present series a strength of 0.0005 mgm in 0.1 mil was used. The readings were made at the end of 48 hours and were graded in the following manner:-

5 mm - 10 mm	one plus	i
10 mm - 20 mm	two plus	ii
More than 20 mm	three plus	iii
More than 20 mm with area of vesiculation and necrosis	four plus	iv.

Age and Sex Distribution.

TABLE I.

Males	Age Group	Total	Positive	Negative	Percentage Positive
	16 +	268	196	72	73%
	11 - 15	519	280	239	56%
	6 - 10	247	77	170	31%
		1034	553	481	53%

TABLE II.

Females	Age Group	Total	Positive	Negative	Percentage Positive
	16 +	133	90	43	68%
	11 - 15	704	360	344	51%
	6 - 10	410	131	279	32%
		1247	581	666	47%

TABLE III.

Totals	Total	Positive	Negative	Percentage Positive
Males	1034	553	481	53%
Females	1247	581	666	47%
	2281	1134	1147	49%

As is to be expected there was a steady rise in positive reactors as age increased, and this tendency was maintained in the case of adults as will be seen in the following table which gives the results obtained in the case of persons tested at the Swaziland Irrigation Scheme (C.D.C) in November 1952:-

Age Groups	% of Positive Reactors
11 - 15	49
16 - 20	62
21 - 25	65
26 - 30	70
31 - 40	83
41 - 55	85

From the preliminary tuberculin survey undertaken in 1950, the age group 1 - 5 gave a positive rate of 20.1%, based on 148 readings.

It was hoped that by making use of the graded Mantoux test in combination with physical examinations, it would be possible to detect active cases of tuberculosis. In a number of cases signs of lung disease were associated with severe reactions, and these were regarded as potential cases of Pulmonary Tuberculosis. In the first part of the survey 52 children in 1444 gave these signs, i.e. 36 per 1000. In the later phases of the survey, this means of detecting cases was found to be most unreliable as an influenza and whooping cough epidemic produced misleading chest signs in many instances. In certain areas in which Bilharziasis is prevalent there was evidence to suggest that skin sensitivity was increased, grade iv reaction being more frequently met with.

The following tables give the results of the graded Mantoux tests, sex differentiation being disregarded in view of the previous findings:-

TABLE I.

Age Group	Total Examined	Negative	No. Positive Grade			
			i	ii	iii	iv
16 +	405	114	49	85	61	96
11 - 15	1235	583	116	173	89	274
6 - 10	657	449	29	45	38	96

TABLE II.

PERCENTAGE POSITIVE.

i	ii	iii	iv
= 12%	= 21%	= 15%	= 24%
= 9%	= 14%	= 7%	= 22%
= 4%	= 7%	= 6%	= 15%

The drop in grade iii reactions is not of any significance, as it is solely attributable to the difficulty in differentiating between grades iii and iv.

Topographical Distribution.

As Swaziland is arbitrarily divided into three distinct zones, namely, highveld, middleveld and lowveld, it was thought that there might be increased sensitivity in the highveld at 4000 feet and upwards, where pulmonary diseases are most commonly met with, and lowered sensitivity in the lowveld where the population is more scattered and less exposed to the risk of contracting tuberculosis. The results are tabulated below:-

High-veld	Age Group	Total	Positive	Negative	Percentage Positive
	16 +	102	72	30	71%
	11 - 15	251	103	148	41%
	6 - 10	143	35	108	24%
	TOTALS	496	210	286	42%
Middleveld	Age Group	Total	Positive	Negative	Percentage Positive.
	16 +	238	169	69	71%
	11 - 15	813	454	359	56%
	6 - 10	430	141	289	33%
	TOTALS	1481	764	707	52%
Lowveld	Age Group	Total	Positive	Negative	Percentage Positive
	16 +	61	45	16	74%
	11 - 15	169	83	76	52%
	6 - 10	84	32	52	38%
	TOTALS	304	160	144	53%

It would appear from the foregoing figures that the highveld has a lower positive reaction rate than the other two areas particularly as the discrepancy is probably due to variations in numbers recorded.

A Table showing the percentage of tuberculosis admissions on total admissions at four hospitals in the territory is given at page 15 and the figures are very similar to those recently obtained in Kenya.

A fifteen-bedded Tuberculosis Block for which funds (£2000) were provided by the Governor-General's National War Fund is under construction at the Arthur Matthews Methodist Mission Hospital, Mahamba, and the Fund has awarded £7000 to the Nazarene Mission for the erection of an isolation block for tuberculosis cases and certain other ancillary services at the Raleigh Fitkin Memorial Hospital, Bremersdorp.

Iso-nicotinic acid hydrazide is being subjected to clinical trial at various centres and is mainly limited to in-patients at institutions where there are facilities for detecting possible toxic effects and assessing results. The results have been encouraging. Streptomycin Conteben and P.A.S have been used on a limited scale.

It is the Department's intention to introduce a comprehensive tuberculosis programme on the lines indicated by the World Health Organisation Expert Committee on Tuberculosis in the paper entitled "Suggestions for the Control of Tuberculosis in Countries with Undeveloped or Under-developed Programmes", when trial investigations have been completed and financial circumstances permit. In creating and extending facilities for the isolation and treatment of cases it is proposed to provide accommodation of the "austerity type", costing not more than £150 per bed (equipped), as advocated by Dr. Dormer and recommended by the Tuberculosis Conference held in Durban in November 1952. Initially these will be 12-bedded units, forming annexes to existing general hospitals.

(v) Dysentery.

(Hospital Cases: 339 In-patients
496 Out-patients).

The incidence of diseases in this group decreased by 13.2% as compared with 1951.

The relative prevalence of the disease in its various forms was as follows, the comparative figures for 1951 being shown in parenthesis:-

Amoebic Dysentery	51.0%	(39.9%)
Bacillary Dysentery	47.5%	(42.8%)
Type unspecified	1.3%	(17.2%)

(vi) Gastro-enteritis and Colitis.

Hospital Cases	(a) between 4 weeks and 2 years	180 In-patients
		1142 Out-patients
	(b) age 2 years and over	54 In-patients
		792 Out-patients
	(c) chronic enteritis and ulcerative colitis	3 In-patients
		1 Out-patient

The incidence of these diseases was no greater than in 1951, but the case distribution was dissimilar as will be observed from the following figures:-

Manzini-Stegi District	29.3%	(47.8% in 1951)
Mbabane-Pigg's Peak-Mankaiana District	33.2%	(27.9% in 1951)
Hlatikulu District	37.4%	(24.1% in 1951)

b

	MBABANE					HLATIKULU					MANKAIANA					RALEIGH FITKIN MEMORIAL HOSPITAL				
	Total Admissions	Pulmonary	Non-Pulmonary	Total Tuberculous Admissions	% of Tuberculous Admissions on Total Admissions	Total Admissions	Pulmonary	Non-Pulmonary	Total Tuberculous Admissions	% of Tuberculous Admissions on Total Admissions	Total Admissions	Pulmonary	Non-Pulmonary	Total Tuberculous Admissions	% of Tuberculous Admissions on Total Admissions	Total Admissions	Pulmonary	Non-Pulmonary	Total Tuberculous Admissions	% of Tuberculous Admissions on Total Admissions
1952	2387	27	12	39	1.6	1804	34	37	71	3.9	835	8	4	12	1.4	2918	81	35	116	3.9
1951	2399	21	6	27	1.1	1755	25	12	37	2.1	822	2	3	5	0.6	2824	67	12	79	2.7
1950	1878	16	17	33	1.7	1710	23	13	36	2.1	797	2	1	3	0.3	2397	91	22	113	4.7
1949	1933	21	11	32	1.6	1385	19	11	30	2.1	736	1	1	2	0.2	1903	32	16	48	2.5
1948	2155	28	16	44	2.0	1485	19	17	36	2.4	722	2	1	3	0.4	2174	34	9	43	1.9
1947	2165	39	16	55	2.5	1531	22	18	40	2.6	758	-	-	-	0.0	1931	31	21	52	2.6
1946																2260	30	13	43	1.9

(vii) Venereal Diseases.

The cases treated at various centres during the year under review are shown in the table on page 17.

Despite the fact that facilities for receiving treatment were made more readily available at additional centres in the bushveld, e.g. Lesters, Lubuli, Gollel, the number of cases of syphilis treated fell by 5.6%, but the overall incidence of Gonorrhoea increased by 8.3%, as compared with the previous year.

The variations in the incidence of Venereal Diseases in certain parts of the territory since the end of 1951 are shown in the following table:-

Place	Syphilis		Gonorrhoea	
	Increase	Decrease	Increase	Decrease
Mbabane	-	22.7%	-	18.4%
Mankaiana	1.0%	-	-	8.6%
Mbabane-Pigg's Peak District	6.0%	-	1.3%	-
Hlatikulu (General)	41.6%	-	-	17.0%
Goedgegun	-	14.4%	-	36.9%
Bremersdorp	-	11.6%	-	2.6%
Manzini-Stegi District (General)	-	29.7%	-	15.2%
Stegi(Health Centres 2)	-	32.4%	48.5%	-

Prolonged-action penicillin in single doses of 300,000 units is the routine treatment adopted in the case of out-patients attending the main hospitals for the treatment of Gonorrhoea. The "one shot" treatment of syphilis with Procaine Penicillin G with aluminium Monostearate, (P.A.M), in doses of 2.4 and 1.2 mega units is under investigation. Serological survey work was temporarily suspended owing to the leave movements of laboratory staff.

(viii) Typhoid and Paratyphoid Fever.

99 cases (3 deaths) were notified from the Manzini-Stegi (42), Hlatikulu (36), and Mbabane-Pigg's Peak-Mankaiana (21),Districts, as compared with 103 cases (10 deaths) in 1951, and 59 cases (3 deaths) in the previous year.

As in previous years the disease was mainly sporadic in character, but localised outbreaks occurred in the following situations, Mapungwane (February and Mambane (February) to the south of Stegi, Mhlotsheni (February), Bremersdorp (February), St. Michael's School (March), Matapha School (September), Mahamba (October), Gege (November), Sicunusa (November), Driefontein farm (December), Mgazini (December) and Nsungweni (December) near Goedgegun. All these outbreaks were investigated and mass inoculation of contacts was carried out at Mhlotsheni, Mambane (55), Mapungwane (121), Ebenezer Mission (156), St. Michael's School (66) Matapha (102), and the Sicunusa area (112). Spraying with residual insecticide was carried out in certain native areas where flies were particularly abundant. Advice regarding preventive measures was communicated to the public through the press, and by other means, on two occasions during the year.

Chloramphenicol was used as a life-saving measure in the treatment of severe infections.

Disease	Mbabane Hospital	Mankaiana Cottage Hospital	Other Health Centres Mbabane-Pigg's Peak-Mankaiana Districts (Northern District)	Hlatikulu Hospital	Health Centres Hlatikulu (Southern District)	Arthur Matthews Methodist Hospital, Mahamba	Raleigh Fitkin Memorial Hospital, Bremersdorp.	Health Centres Manzini-Stegi (Central District)	District Surgeon, Stegi	Lesters Health Centre	Lubuli-Gollel	Swaziland Irrigation Scheme (C.D.C)	Total
I. SYPHILIS													
(A) Early Syphilis (i) Primary	294	1	-	63	-	-	121	-	-	-	-	-	479
(ii) Secondary	73	266	-	185	-	-	187	-	-	-	-	-	711
(iii) Early Latent (Asymptomatic)	180	28	-	66	-	-	1	-	-	-	-	-	275
(B) Late Syphilis Tertiary (i) Skin, mucosal, bone, muscle, joint.	1	-	-	6	-	-	2	-	-	-	-	-	9
(ii) Cardiovascular	-	-	-	-	-	-	1	-	-	-	-	-	1
(iii) Neurosyphilis	-	-	-	-	-	-	2	-	-	-	-	-	2
(iv) Late Latent (Asymptomatic)	41	-	-	6	-	-	-	-	-	-	-	-	47
(C) Congenital													
(i) Early (under 2 years of age)	71	48	-	55	-	-	64	-	-	-	-	-	238
(ii) Late (over 2 years of age).	-	35	-	7	-	-	-	-	-	-	-	-	42
(D) Undifferentiated	-	-	575	-	753	127	-	571	357	13	69	80	2545
Total	660	378	575	388	753	127	378	571	357	13	69	80	4349
II. GONORRHOEA													
(i) Acute	585	61	92	95	307	31	241	133	322	5	51	149	2072
(ii) Chronic	-	2	-	2	-	-	20	-	-	-	-	-	24
Total	585	63	92	97	307	31	261	133	322	5	51	149	2096
III. OTHER VENEREAL DISEASES	-	4	5	1	-	-	4	-	-	5	-	-	19
IV. RE-ATTENDANCES.													
Syphilis	5147	2212	1277	2220	3339	802	3905	3342	2503	64	229	229	25269
Gonorrhoea	351	53	22	285	119	9	26	100	648	4	46	242	1905
Other Venereal Diseases	-	9	-	4	-	-	-	-	-	-	-	-	13
Total Re-attendances	5498	2274	1299	2509	3458	811	3931	3442	3151	68	275	471	27187

(ix) Diphtheria.

Eight cases, with two deaths, were reported, as compared with seventeen cases and four deaths in the previous year. Seven of the cases occurred in the Manzini District, and one in the Mbabane area. Following the detection, in February, of two European cases in the Government School at Bremersdorp 32 non-immune contacts were passively immunised, and all children (68) who had not been inoculated within the last two years were re-inoculated with Alum. precipitated Toxoid. In March, the immediate contacts (20) of two African cases from the vicinity of the Central School were given prophylactic inoculations of Diphtheria antitoxin. In December, 38 children, close contacts of a case from Mali Yaduma were inoculated.

(x) Whooping Cough.

The prevalence of Pertussis was far greater than in 1951, and the distribution of cases was as follows:-

District	No. of cases	Deaths
Mbabane-Pigg's Peak-Mankaiana District	160	-
Manzini-Stegi District	129	-
Hlatikulu District	78	3
Havelock Mine	38	1
Total	405	4

(xi) Acute Poliomyelitis.

No cases were recorded during 1952.

(xii) Measles.

186 cases were reported, as against 95 in 1951. In 1952 the prevalence of the disease was greatest at the Havelock Mine and Manzini District, the bulk of the cases occurring during the last quarter of the year.

	Cases	Deaths
Havelock Mine	87	-
Manzini District	50	4
Mbabane-Pigg's Peak-Mankaiana District	37	-
Hlatikulu District	12	-
Totals	186	4

(xiii) Chicken Pox.

89 cases were reported, as compared with 75 during 1951. Cases were evenly distributed throughout the territory and the incidence was greatest in the third quarter of the year.

(xiv) Relapsing Fever.

No cases were detected during the year.

(xv) Tick Typhus.

Four cases were reported from the Mbabane area, and three from the Havelock Mine. Their seasonal distribution was irregular, the

Havelock cases occurring in November and December, and those at Mbabane during the "winter" months.

(xvi) Influenza.

The incidence of this disease was 38.7% greater than in 1951, and as is customary its prevalence was greatest in the areas served by the Mbabane Hospital.

The distribution of cases was as follows:-

Mbabane-Pigg's Peak-Mankaiana areas	666
Manzini-Stegi District	303
Hlatikulu District	159
Havelock Mine	150

(xvii) Cerebro-spinal Meningitis.

Nine cases, with two deaths, were notified as compared with ten in 1951. Eight cases (2 deaths) occurred at the Havelock Mine in two small outbreaks in March and October-November. The remaining case was reported from the Manzini District.

(xviii) Epidemic Parotitis.

132 cases were reported, of which 96 occurred at the Havelock Mine mainly during June and July.

The distribution of the remaining cases was as follows:-

Mbabane	32
Hlatikulu	3
Bremersdorp	1

(xix) Infectious Mononucleosis.

No cases were reported during the year.

(xx) Leprosy.

The staff of the Mbuluzi Leper Hospital consisted of a Medical Superintendent (non-resident), an European Matron, a Nurse, a Teacher, a Chaplain and Liaison Officer, an Ambulance Driver, and one labourer. The Hospital is visited by the Medical Superintendent at fortnightly intervals, and its clerical work is performed by the staff of the Raleigh Fitkin Memorial Hospital, Bremersdorp.

The number of in-patients on the 31st December 1952 was 43, i.e. 17 adult males, 17 adult females, 3 male and 6 female children, as compared with a total of 57 at the end of 1951. It is encouraging to note that there were no children amongst the admissions, and that most of the cases presented themselves for treatment voluntarily. A steady improvement was evident in almost all the patients, and this is attributable to the use of the sulphone drugs, and the improved hygienic and nutritional conditions experienced on admission to the Colony. Discipline in the institution has improved since one of the patients was appointed as a Special Constable, and the visits of the District Commissioner have been of considerable assistance to the hospital's administration.

Health of Patients.

The general health of the patients has been good. A few lepromatous cases which have hitherto failed to respond to treatment, have now begun to undergo improvement after a lapse of two or three years. Apart from disabilities due to deformities and trophic ulcers, and blindness in two cases, most of the patients are ambulatory and capable of undertaking some form of manual work.

Additions to Population.

	Males	Females	Total
Admissions	9	9	18
Re-admissions	1	1	2
Desertions	-	-	-
Totals	10	10	20

Losses in Population.

	Males	Females	Total
Deaths	1	-	1
Desertions	1	-	1
Discharges	17	15	32
Totals	19	15	34

Origin of patients admitted.

District	Males	Females	Total	%
Mbabane	4	5	9	45
Pigg's Peak	3	2	5	25
Stegi	2	1	3	15
Mankaiana	-	1	1	5
Hlatikulu	1	-	1	5
Barberton	-	1	1	5
Totals	10	10	20	100.00

Duration of Disease before Admission.

Duration	Admissions	Percentage
0 - 1 years	3	15
1 - 2 years	5	25
2 - 3 years	4	20
3 - 4 years	2	10
4 - 5 years	1	5
Over 5 years	5	25

Classification on Admission.

Classification	Admissions	Percentage
Lepromatous	6	30
Neural	10	50
Mixed	1	5
New born	3	15

Of the 43 patients in the Institution the following table shows the type of disease according to sex.

Type	Male	Female	Total	Percentage
Lepromatous	16	11	27	62.7
Neural	2	12	14	32.7
Mixed	2	-	2	4.6

Average age on admission: 29.75 years.

Proportion of children to Total Admissions.

Of a total of 20 admissions, three were new-born babies, representing 17.6% as against 3 (18.75%) during 1951.

Treatment (General).

There were 18,895 attendances at the Dispensary, as compared with 23,734 in 1951. The following cases were admitted to hospital:-

Lepra reaction	16
Mental derangement	3
Trophic ulcer	3
Tuberculosis	3
Confinements	3
Influenza	2
Burns	1
Blindness	1
	32 (1,856 In-patient days).

Anti-Leprotic Treatment.

All cases were treated with Diamino-diphenyl sulphone by mouth, together with iron and Vitamin B in the form of Blaud's pills and yeast tablets administered daily. The dose of DADPS has been reduced and very few patients are now receiving more than 0.1 gm. per day. A few cases have been treated with Isoniazid, but the value of this form of treatment has not yet been assessed.

Laboratory Examinations.

254 smears were examined for the presence of Microbacterium leprae and the results were as follows:-

	Positive		Negative		Total
	Nasal	Skin	Nasal	Skin	
Lepromatous	-	68	6	56	130
Neural	-	5	-	72	77
Mixed	-	20	-	27	47

Vital Statistics.

The population figures derived from the lastest (1946) Census are given below:-

	Males	Females	Total
Europeans	1727	1474	3201
Coloured	359	380	739
Swazis	91014	87617	178,631) 181,269
Foreign Natives	2371	267	2638)
Asiatics	5	1	6
Total	95476	89739	185,215

Total European Population	3201
Total European Births	60
Total European Deaths	17
Birth rate per 1000	18.7
Death rate per 1000	5.3
Infant mortality rate	15.6

Table showing causes of Death:

Causes of Death	Number of Deaths
Diseases of the heart, and other diseases of the Circulatory System	6
Violence	6
Peritonitis	1
Pneumonia	1
Other diseases of digestive system	1
Senility	1
Other causes	1
Total	17

Registration is not compulsory in the case of the Non-European population.

III. HYGIENE AND SANITATION.

A. (i) Preventative Measures.

(a) Malaria. The scope of anti-malaria measures throughout the territory has again been increased, 45780 huts being treated with residual insecticide as compared with 36,550 in 1951 and 23,000 in 1950. As in previous years it was only in the case of Bremersdorp township and the Swaziland Irrigation Scheme (C.D.C) that imagocidal measures were reinforced by larvicidal operations. It is estimated that during the 1952/53 transmission season an additional 10,000 huts in areas normally free from malaria will have to be included in the spraying programme, and the need for a third application of B.H.C in controlled areas in the bushveld, which are ordinarily treated on two occasions only, will increase the extent of the spraying measures by 50,000 huts.

(b) Smallpox. No special measures against this disease were instituted during 1952.

(c) Typhoid and Paratyphoid Fevers and other Salmonella infections.

All outbreaks were carefully investigated by the Health Office Staff.

(d) Diphtheria and Whooping Cough. The routine immunization of children against these diseases was carried out on an increased scale.

(e) Schistosomiasis. Of 191 children examined at the Goedgegun Government School, 11.4% were found to be infested with S. haematobium, and arrangements were made for their treatment.

During the course of the school survey no evidence of infection was discovered in the highveld, but the infectivity rate in other areas was as follows:-

Middleveld	30 - 75%
Bushveld	17 - 35%.

The control measures in the vicinity of Bremersdorp are confined to the Mzimnene river and extend from its source to a point below the station. From a practical point of view it may be assumed that the entire African population of this area is infected, and some years must elapse before the results of the measures which are now being employed can be assessed. Experiments with "Nilodin" are planned for 1953 with a view to determining the re-infestation rate of cured cases entering the infected zones.

(ii) General Measures of Sanitation.

(a) The widespread use of residual insecticides primarily used as an anti-malaria measure is destroying flies and other insect pests, in large numbers, and this assists in combatting the spread of diseases which are disseminated by these means.

(b) Water Supplies. Bacteriological analyses of the treated water supplies at Bremersdorp and Stegi were carried out at quarterly intervals. At Bremersdorp an emergency scheme to increase the quantity and improve the potability of the water is to be introduced early in 1953. At Goedgegun, untreated water is still reticulated throughout the town, but plans have been prepared for the provision of a filtration plant. The water supply at Stegi is extremely precarious, and efforts to augment the supply have met with no success. The main work on the installation of the new Mbabane water supply is expected to be completed by the end of 1953.

(c) Conservancy and Refuse Disposal. Sanitary conditions in the Urban Areas improved as numerous pit and bucket latrines on private premises were demolished and replaced by those of a water-borne type. Certain Local Authorities acting on the advice of the Medical Department have eliminated insanitary public lavatories and intend to instal water-borne sanitation for communal use.

With the object of facilitating the disposal of refuse in Urban Areas amendments to the Urban Areas Regulations (Cap. 32 Laws of Swaziland) were prepared, and submitted to the various Urban Areas Advisory Committees for their consideration, preparatory to their being given legal effect.

(d) Drainage. During the routine inspection of premises drainage defects have been noted and rectified in a number of cases. Serious drainage problems are being created as a result of commercial development and the contamination of streams used as domestic water supplies.

(e) Bush-clearing. Progress continues to be made in clearing plots of bush and undergrowth, and the erection of fencing.

(iii) School Hygiene. The routine medical inspection of school children was carried out at St. Mark's School, the Trades School, Mbabane, the Swazi National School, Matapha, and Goedgegun European School, by the respective district medical officers, and the children at the Boarding Schools at Bremersdorp (4), Our Lady of Sorrows (Hluti) and the Mbuluzi Girls School were examined by the Medical Officer (Health) during the course of the special investigation of which particulars are given below. There were 1080 attendances at the Matapha School Clinic.

During the period May to October 3268 children at 29 different schools in various parts of the territory were examined by a team consisting of the Medical Officer (Health) and another Medical Officer, with the object of assessing the standard of health of the Swazi child, and obtaining information with regard to the incidence and distribution of disease amongst this section of the community. The survey was commenced in Bremersdorp and proceeded north to Horo, Pigg's Peak and Mbabane. In August it started at

the Usutu Mission travelling south to Mankaiana, Goedgegun, Hlatikulu and Hluti and from thence to Stegi. The team was thus in the Southern area at the end of the dry winter season and certain skin changes and a relatively higher incidence of scabies were detected. The period also coincided with outbreaks of chicken pox and whooping cough. The findings of the survey are summarised below:-

(a) Infectious Diseases.

Most of the cases recorded exhibited evidence of previous infection:-

Chickenpox		28
Tuberculosis:-	Spine	1
	Glands	5
	Lungs	13 (suspect only)
Gingivitis		8
Poliomyelitis		3
Smallpox		2
Infective Hepatitis		1
Conjunctivitis		1

(b) Vitamin Deficiencies.

Rachitis	12
Vitamin C	7
Vitamin A	1

(c) Congenital Diseases.

Syphilis	10
Cretinism	4
Deformities	3
Cardiac Disease	2
Hydrocephalus	1
Albinism	1

(d) Other Diseases.

Bilharziasis	827 (out of 2428 examined).
Severe Burns	15
Bone injuries	5
Osteomyelitis	4
Exostosis	2
Herpes Zoster	2
Elephantiasis	1
Deaf and Dumb	1
Osteitis deformans	1
Epilepsy	1
Bell's palsy	1
Myxoedema	1
Exophthalm os	1
Asthma	1
Erb's Palsy	1

(e) Nutrition.

The average Swazi school child showed no specific clinical deficiencies. The weight, height, age relationship has not yet been worked out, and this and the question of nutrition in general will form the subject of a special report.

(f) Skin Conditions.

The condition of the skin was classified as follows:-

I. Normal skin.
II. Dry Scaly Skin.
III. Dry skin with crazy pavement appearance resembling that found in pellagra. It was at first assumed that this manifestation was due to a Vitamin B deficiency, but as the investigation proceeded other factors were found which appeared to influence these changes. The Number III condition occurred mainly between the knee and the ankle, and was uninfluenced by the fact that many children oiled their skins. It was present in children who were otherwise fit. The condition was most prevalent in the south of the territory, which was visited towards the end of the dry season. Climatic factors should therefore appear to effect the etiology, and the children themselves stated that the condition usually appeared during the dry season. The condition was particularly evident in the Gege area where drought conditions had been experienced for some four years. It will be observed from the following tables that the incidence decreases with age, and is thus coincident with an improvement in general health.

There was no sex-differentiation, but the condition was most commonly met with in the middleveld. This may, however, be attributable to the fact that the majority of the schools in the south are in middleveld areas:

Skin Conditions.

Sex and age Group	Total Examined	Skin II	Skin III	% of III.
16 x Males	376	59	15	3.9%
16 x Females	191	37	13	6.8%
11 - 15 Males	764	440	157	20.6%
11 - 15 Females	987	456	199	20.0%
6 - 10 Males	363	284	97	26.7%
6 - 10 Females	587	376	137	23.9%
	3268	1652	618	18.9%

Area Distribution.

Area	Total examined	Skin III	% of Skin III.
Highveld	865	111	12.8
Middleveld	1882	441	23.4
Bushveld	521	66	12.6
Total	3268	618	18.9

It is believed that climatic conditions play an important part in the production of these skin conditions, and that the Number II condition is entirely attributable to that cause. Skin III, although influenced by climatic effects is held to be due to a nutritional factor.

(g) Liver and Spleen Enlargement.

The following table shows the sex and age distribution of enlarged livers, and the area of distribution. Liver enlargements were graded in the following way, each child lying down during the examination:-

"P" Palpable on inspiration, including many cases which showed enlargement of the left lobe only.
"+" One finger below costal margin.
"++" Two fingers below the costal margin.
"+++" Over two fingers below costal margin.

So few spleens were found on this investigation that no grading was done. In the majority of cases the spleen was one to two fingers, below the costal margin when the child was lying down and on inspiration.

Age/Sex Group	Total Exams.	P	Livers 1	2	3	Total 1+2+3	%	Spleen Spleens	%
16 M	376	17	6	-	-	6	1.6	3	
16 F	191	5	-	-	-	-	-	1	
11-15 M	764	121	51	17	4	72	9.4	10	
11-15 F	987	144	42	16	4	62	6.6	4	
6 -10 M	363	98	41	22	2	65	17.9	4	
6 -10 F	587	153	64	21	5	90	15.3	3	
	3268	538	204	76	15	295	24.8	25	2.3

Area distribution of total liver enlargement excluding palpable livers:-

	Total Examinations	LIVER ENLARGEMENT Total	%	SPLEEN ENLARGEMENT Total	%
Highveld	865	64	7.2	1	0.1
Middleveld	1882	8168	8.9	-	-
Bushveld	521	63	12.7	24	4.6
	3268	295	24.8	25	2.3

Liver enlargements again show a steady decrease with age. Palpable livers have not been included in the percentage figures as it was felt that they were indefinite and depended largely on the examiner. Many cases of palpable livers included a definite enlargement of the left lobe only. The lowveld area shows the highest figures; this may be due to parasitization, i.e. Bilharzia etc, as malaria can now be ruled out as a major cause. In nearly all cases the livers were hard, suggesting fibrosis. In the highveld the livers when enlarged were soft and the edge was mobile. In many cases in the middleveld and lowveld where no liver enlargement was found there was a fairly marked guarding and rigidity of the right hypochondrium suggesting a liver damage.

Spleen enlargements were confined to the bushveld. The low figures of the younger age group show how effective the malaria control scheme has been when one compares these findings with the figures found before anti-malaria measures were introduced.

(h) Ear, Lung and Eye Disease.

The following tables show the incidence of ear, lung, and eye disease, and the prevalence of Scabies according to the age groups and area distribution:-

Sex/Age Group	Total Exams.	Ear		Lung		Eye		Scabies	
		Cases	%	Cases	%	Cases	%	Cases	%
M 16 +	376	7	1.9	21	5.6	3	0.8	15	4.0
F 16 +	191	7	3.7	5	2.6	3	1.6	7	3.7
M 11 - 15	764	16	2.1	45	5.9	3	0.4	131	17.1
F 11 - 15	987	16	1,6	53	5.4	4	0.4	140	14.2
M 6 - 10	363	3	0.8	32	8.8	1	0.3	68	18.7
F 6 - 10	587	13	2.2	60	10.2	11	1.8	137	23.3
	3268	62	1.9	216	6.5	25	0.8	498	15.2

Area Distribution.

	Total Exams.	Ear		Lung		Scabies		Eye	
		Cases	%	Cases	%	Cases	%	Cases	%
Highveld	865	17	2.0	30	3.5	100	11.6	4	0.5
Middleveld	1882	40	2.1	125	6.6	345	18.4	15	0.8
Bushveld	521	5	1.0	61	11.7	53	10.2	6	1.2
	3268	62	1.9	216	6.6	498	15.2	25	0.8

(i) Ear Disease. Positive findings for ear disease are based on conditions which involved the drums i.e. inflammatory changes. They also included a certain number of cases which had foreign bodies e.g. grass seeds and insects lodged in the ear. From these figures the incidence of ear disease appears to be relatively low.

(ii) Lung Disease. Cases of lung disease were all those children who showed the presence of persistent adventitious sounds. In the early part of the survey, children exhibiting these signs and having a strongly positive Mantoux test were regarded as possible cases of Tuberculosis, but as already stated, in the latter part of the investigation a whooping cough and influenza epidemic was encountered which made the recording of Tuberculosis cases so unreliable that the system was abandoned.

(iii) Scabies. Scabies is a very common infection amongst Swazi children. As the investigation was carried out in winter the incidence was probably at its peak, and the frequency with which the disease is met with in the South was far higher than in the North.

Scabies was found to be associated with unhealthy skins as previously described. The highest incidence occurred in the Gege area where the general health of the children was found to be low in comparison with other areas.

(i) Heart.

The table shows the incidence of heart murmurs as found by examination with the stethescope, and once again it is interesting to note the insignificant variation in the three areas.

The systolic murmurs, in contradistinction to the presystolic, were in the majority of cases probably functional in origin or of a transient nature.

Sex/Age Group	Total Examinations	Heart Murmurs. Presystolic		Systolic	
		Cases	%	Cases	%
M 16 +	376	21	5.6	37	9.8
F 16 +	191	4	2.1	21	10.9
M 11 - 15	764	32	4.2	83	10.9
F 11 - 15	987	59	5.6	142	14.4
M 6 - 10	363	7	1.9	65	17.4
F 6 - 10	587	20	3.4	83	14.2
	3268	143	4.4	431	13.2

Area	Total Examinations	Presystolic Murmurs Cases	%
Highveld	865	42	4.9
Middleveld	1882	77	4.1
Bushveld	521	24	4.6
	3268	143	4.4

(j) Miscellaneous findings.

The following tables give the findings for Tonsillar enlargement, Glandular enlargements in the Cervical and Supraclavicular Regions, Dental Caries and Mottling, and the Prevalence of Umbilical Hernia:-

Sex/Age Group	Total	Tonsils Cases	%	Glands Cases	%	Caries Cases	%	Mottling Cases	%	Umbilical Hernia Cases	%
M 16 +	376	54	14.4	81	21.5	43	11.4	69	18.4	36	9.6
F 16 +	191	33	17.3	31	16.2	39	19.4	37	19.4	15	7.9
M 11-15	764	251	32.9	548	17.7	78	10.2	181	23.7	272	35.6
F 11-15	987	405	41.0	617	62.5	120	12.2	196	19.9	311	31.5
M 6-10	363	140	38.6	287	79.1	42	11.6	77	21.2	165	45.4
F 6-10	587	287	48.9	452	77.0	63	10.7	119	20.3	276	47.0
	3268	1170	35.8	2016	61.7	385	11.8	678	20.8	1075	32.6

Area	Total	Tonsils Cases	Tonsils %	Glands Cases	Glands %	Caries Cases	Caries %	Mottling Cases	Mottling %	Hernia Cases	Hernia %
Highveld	865	304	35.3	523	60.4	130	15.1	210	24.3	246	28.4
Middleveld	1882	696	36.9	1170	62.2	200	10.6	394	20.9	591	31.4
Bushveld	521	170	32.6	323	61.9	55	10.7	75	12.3	239	45.9
	3268	1170	35.8	2016	61.7	385	11.8	679	20.8	1075	32.6

(i) Tonsils and Glands. As one would expect the incidence of enlarged tonsils and glands is high in the younger age-groups and possibly gives some indication of upper respiratory tract infections. It is interesting to note that changes in climatic conditions as indicated by the three areas appear to have little effect on incidence.

(ii) Dental Caries and Mottling. The incidence of dental caries and mottling appears to be higher in the highveld, no doubt due to deficiencies in the water-supplies.

(iii) Umbilical Hernia. Once again the younger age-groups show a higher percentage of hernias. Persistent hernia is due to poor muscle development.

(k) General. From this investigation it is apparent that in general the health of the Swazi school-children is reasonable. There is no gross malnutrition, and the incidence of disease does not manifest itself clinically to any large extent. Bilharzia is undoubtedly one of the most prevalent diseases at present.

(iv) Labour Conditions. Steady progress is being made in respect of African housing, feeding and the provision of sanitary facilities in various parts of the territory. Messrs Swaziland Plantations, in the Lomati Valley have completed a new temporary native compound, and at the instigation of the Medical Department, ablution facilities, water-borne sewerage, and a filtered water supply are now being installed. Intensive anti-malaria measures are being carried out under the supervision of the Malaria Control Unit, and the material for an extensive Bilharzia Campaign is on hand, and control measures will be instituted throughout the entire project early in 1953. The Swaziland Irrigation Scheme is systematically replacing certain of their original compounds and providing new huts, and their Health Centre and Consulting Rooms have been completed. The Resident Medical Officer is responsible for malaria control measures on the Scheme's property. The native compound of the Usutu Orchards Section of Usutu Forests (C.D.C), which is to be rebuilt when the canal now under construction is completed, has been regularly sprayed with residual insecticide by Medical Department Staff.

(v) Buildings. Uncontrolled settlement and building development within the urban and peri-urban areas surrounding townships is creating public health problems which are a source of anxiety to the Department, and the question of the provision of alternative accommodation either in locations, village settlements or native residential areas is acquiring added urgency and importance. Since the examination of building plans was placed on an organised basis, and regular inspection of building operations has been instituted, the general building standards have improved considerably. 59 plans to a total value of £92,313 were examined and commented upon by the Public Works Department and the Health Office Staff, and 164 visits were paid to buildings in the process of construction. The routine inspection of residential and trade premises was continued, in connection with which 188 visits were made by the Health Inspector. Occupants and owners have mostly conformed with the sanitary requirements of the Department. Sanitary Notices were served in a few cases, and it was only necessary to institute legal proceedings on one occasion.

Five new houses for European officials were erected at Mbabane (1 "G2 Type and 1 "G3"), Bremersdorp (2 "G3" type), and Stegi (1 "E" type), and three others (1 "G1" and 2 "G3") were under construction at Mbabane. The building of six improved type (N.F.2/50) houses for African officials was commenced at Pigg's Peak (2), Mankaiana (2), and Hlatikulu (2), and at Mbabane (1) and Bremersdorp (4), five N.F.1 type houses were brought up to the new (N.F.2/50) standard, by the incorporation of certain improvements in the design.

(vi) Food in relation to Disease.

(a) Trade Premises. Routine examination of foodstuffs and inspection of trade premises and hotels were carried out in the Urban Areas, and the number of inspections are shown below:-

General Dealers	190
Butcheries	145
Native Eating Houses	30
Restuarants	18
Slaughter Houses	15
Hotels and Clubs	12

Reports on all hotels were submitted to the Liquor Licensing Courts, and general sanitary conditions on these premises have improved considerably.

A consignment of condensed milk and 85 tins of canned fruit, meat and fish were condemned as unfit for human consumption.

(b) Meat Supplies. Routine meat inspection which was suspended at Mbabane and Bremersdorp in March 1951, has not yet been resumed, but it is intended to recommence regular examination of carcases early in 1953 when certain improvements to the abattoirs at both of these Centres are expected to be completed. Since 1st March 1952, meat inspection has been carried out at Goedgegun by officials of the Veterinary Department, and figures relating to this service are given below:-

Inspected			Condemned for measles		
Cattle	Sheep	Pigs	Cattle	Sheep	Pigs
235	22	31	4	1	-

The incidence of measles in bovine carcases was 1.7%. Arrangements have been made to start meat inspection at Stegi.

B. Measures taken to spread the knowledge of Hygiene and Sanitation.

A series of lectures on hygiene were given by the Health Inspector to the field staff of the Veterinary Department at Mpisi Farm.

In co-operation with the Education Department arrangements have been made to embark on a health propoganda campaign at schools throughout the territory during 1953.

C. Training of Personnel.

Attached to the Raleigh Fitkin Memorial Hospital at Bremersdorp, is the Ainsworth Dickson Nursing School at which nurses and midwives are trained for the various Certificates mentioned below:-

(i) High Commission Territories Nursing Council Certificate.

The Hospital is registered by the Nursing Council as a training school for certificates in Medical and Surgical Nursing, and Midwifery. During the year under review five out of six candidates passed the Preliminary Examination. The course is of four and a half years duration, and the number of students with the required standard of education (Standard VIII) is still comparatively small. A group of nine pupils who are eligible

to train for this certificate were admitted to the course during the year. A group of three students with the necessary education qualification (Standard VII) were admitted to the course which qualifies for the Council's Midwifery Certificate. This course is 9 months for qualified nurses and 18 months for others.

(ii) Swaziland Nursing Certificate.

For students with a minimum educational qualification of Standard VI, a four year course of training is provided. Five students commenced this course in 1952. The following are the results of the examination set by the Executive Nursing Committee for Swaziland during the year:-

	Passed	Failed
Preliminary Examination	18	-
Final Examination	11	1

(iii) Nurse Aide Course.

For girls of Standard IV and V educational qualification, a Nurse-Aide course of 2 years is given. Instruction is given in First Aid, Home Nursing and Infant Welfare, and successful candidates receive the Certificate of the Red Cross Society, which appoints the examiners.

The following number of students were undergoing training at the end of the year:-

	Nurses	Midwives	Nurse-Aides	Grand Total
1st year	14	3	-	17
2nd year	4	-	4	8
3rd year	1	-	-	1
4th year	4	-	-	4
Total	23	3	4	30

In connection with the training of medical auxiliaries, a visit paid to the Institute of Family and Community Health at Clairwood was of great interest and instructional value. Its complex scheme of training which aims, inter alia, at the close integration of the curative, preventive and promotive aspects of the health needs of the community, is suited to the requirements of this territory, especially where it applies to the tuition of nurses intended to enter the field of family and home nursing, and Health Assistants (Health Educators) concerned with the development of health education in areas served by Health Centres.

As soon as the financial circumstances permit of an expansion of services in the sphere of public health, beyond its present limits, the Department may wish to avail itself of the training facilities provided at Clairwood, by the Union Department of Health, or offer employment to trainees of the Institute.

IV. MATERNITY AND CHILD WELFARE.

(a) Mbabane, Pigg's Peak and Mankaiana District.

44 Europeans and 816 Africans attended the weekly ante-natal clinic at Mbabane Hospital, and 268 deliveries were conducted, as against 318 in 1951. 192 infants and 20 mothers received attention at the Child Welfare Clinic at Matapha, and 10 confinements were attended by the School Nurse.

The number of maternity cases dealt with at Health Centres is shown in the following table:-

Health Centre	No. of Cases
Mankaiana	98
Horo	20
Government Farm	7
Hebron	38
Total	163

(b) Manzini and Stegi District.

Raleigh Fitkin Memorial Hospital, Bremersdorp.

Ante-natal attendances	2966
Child Welfare attendances	2893
Confinements	341

Table showing the number of maternity cases at Nazarene Mission Health Centres.

Health Centre	No. of Cases
Stegi	72
Endingeni	70
Pigg's Peak	35
Mliba	22
Mafuteni	8
Bhekinkosi	4
Balegane	9
Malinda	8
Ebenezer	17
Total	245

(c) Hlatikulu District.

Clinic	Ante-natal first Attendances	Confinements
Hlatikulu Hospital	474	170
Goedgegun	400	
Mhlotsheni	98	-
Hluti	94	-
Sipofaneni	184	-
St. Philips	167	-
Our Lady of Sorrows	-	5
Lubuli-Gollel	204	-
Mahamba Hospital	-	11
Totals	1621	186

V. HOSPITALS AND DISPENSARIES (HEALTH CENTRES).

(a) Mbabane Hospital.

Number of beds (European)	10
Number of beds (African)	98
Number of cots (African)	20
	128

Two isolation wards were extended and converted into a house for the European Handyman, and work on the extensions to the hospital was suspended on the 20th of March, and no further improvements were carried out after that date.

Daily average number of In-patients (European)	3.2
Daily average number of In-patients (Eurafrican)	0.5
Daily average number of In-patients (African)	101.0

The corresponding figures for the previous six years are as follows:-

Year	Daily average No. of In-patients		
	European	Eurafrican	African
1946	0.9	0.15	74.9
1947	0.65	0.42	69.6
1948	0.88	0.65	71.1
1949	1.2	0.59	79.5
1950	1.2	1.1	72.2
1951	1.3	0.8	88.7

Staff.

2 Medical Officers
1 Intern
5 European Nursing Sisters
1 Dispenser-Storekeeper-Radiographer
1 Hospital Assistant
1 African Dispenser
1 African Wardmaster
22 African Nurses
1 Dispensary Orderly
2 Out-patient Attendants
9 Ward Attendants
1 Nurse-Aide

	1946	1947	1948	1949	1950	1951	1952
ons	2287	2217	2210	2237(76)	1966(88)	2491(92)	2557(170)
	41	28	51	55(-)	57(-)	49(3)	72(3)
ments	170	303	339	299(18)	276(27)	318(14)	268(28)
ons	215	193	297	398(70)	441(116)	389(91)	555(183)
ients ses)	8916	8547	8945	9422(1647)	12893(2712)	14159(2971)	13287(2699)
ients endances)	3913	6953	9173	11472(3022)	14059(3356)	15496(3354)	13722(3715)

(Note: European cases, which are included in the totals are shown in brackets).

The high rate of European out-patient attendances at Mbabane Hospital remains undiminished, and, as will be observed from the following table, the volume of work in this sphere is considerably greater than at other hospitals in the territory:-

Station		Average No. per Month					
		New Cases		Re-attendances		New Cases	
		Male	Female	Male	Female	Officials	Non-officials
Mbabane	1946	53.2	56.9	33.9	51.3	-	-
	1947	55.3	54.6	54.5	54.3	-	-
	1948	61.1	57.4	68.2	82.1	19.6%	80.3%
	1949	86.1	77.6	67.6	106.6	18.7%	81.3%
	1950	125.5	102.2	136.5	142.5	18.7%	81.2%
	1951	128.3	108.3	138.6	123.5	11.4%	88.5%
	1952	124.1	101.0	140.7	123.8	13.8%	86.1%
Bremersdorp	1952	62.5	55.6	19.5	17.9	12.3%	87.6%
Hlatikulu	1952	16.4	15.3	44.1	22.7	9.1%	90.8%

(b) Hlatikulu Hospital.

Number of beds (European)	8
Number of beds (Eurafrican)	3
Number of beds (African)	30
Number of cots (African)	3
Daily average number of In-patients (European)	1.4
Daily average number of In-patients (Eurafrican)	0.9
Daily average number of In-patients (African)	80.1

Comparative figures for 1946 onwards are given below:-

Year	Daily average number of In-patients		
	European	Eurafrican	African
1946	2.5	0.7	65.2
1947	3.33	0.61	65.5
1948	2.54	0.46	74.5
1949	1.7	0.52	66.6
1950	1.5	0.4	63.6
1951	2.0	0.7	72.5

Staff.

2 Medical Officers
4 European Nursing Sisters
1 European Hospital Assistant-Dispenser.
1 African Hospital Assistant
1 African Laboratory Assistant
13 African Nurses
1 Dispensary Orderly
6 Ward Attendants

	1946	1947	1948	1949	1950	1951	1952
issions	2245	1647	1313	1483(94)	1814(104)	1896(141)	1900(96)
ths	46	43	50	56(4)	59(4)	55(0)	54(1)
finements	150	188	198	202(22)	159(8)	148(19)	170(16)
rations	112	256	241	242	258(43)	299(34)	342(43)
-patients w cases)		6955	5169	4414(427)	5676(421)	7009(369)	8298(410)
	12145						
-patients -attendances)		2342	2894	3549(493)	2803(392)	1700(330)	3336(806)

A revised scheme for improving the facilities at the Hospital has been prepared, and includes the following proposals:-

(i) Modernization of existing kitchen.
(ii) Conversion of existing European wards for the use of Africans, and the construction of two new 10-bedded African wards, providing, in all, accommodation for 41 additional beds.
(iii) Construction of a new European block containing 10 beds, consulting rooms, etc.
(iv) Existing Nursing Sisters quarters to be converted into an Eurafrican block containing 10 beds, and consulting room, etc.
(v) Existing Dispenser's house to be enlarged and converted into Nursing Sisters' Quarters.
(vi) Construction of a new out-patient department, including consulting rooms, dispensary and laboratory.
(vii) Construction of boiler house and installation of steam plant.
(viii) Alteration to existing laundry.
(ix) Installation of a diesel-operated generating plant.

(c) Raleigh Fitkin Memorial Hospital, Bremersdorp.

Number of beds (European) 8
Number of beds (African) 68
Number of beds (Eurafrican) 4

Admissions.

Year	European	Eurafrican	African	Deaths
1946	281	116	2154	42
1947	264	117	1814	60
1948	232	92	2082	82
1949	201	80	1823	83
1950	228	92	2305	110
1951	274	64	2760	95
1952	197	66	2852	84

Daily average number of In-patients (European) 4.0
Daily average number of In-patients (Eurafrican) 1.9
Daily average number of In-patients (African) 96.8

Out-Patients.

Year	New Cases	Re-attendances	Totals
1946	5540	5500	11040
1947	5283	4680	9963
1948	9253	8314	17567
1949	9404	8620	18024
1950	10853	9853	20706
1951	11688	9700	21388
1952	11383	9134	20517

Staff.

1 Medical Superintendent
2 Medical Officers
1 Intern
1 Bookkeeper
1 Secretary
6 Nursing Sisters
1 Dispensary Assistant
1 Housekeeper
1 Radiographer (Part-time)
1 Laboratory Assistant
7 African Nurses
2 Nurse Aides
23 Probationer Nurses
3 Student Midwives
4 Nurse Aides (trainees)
9 Maids.

A scheme for improving and extending the accommodation at the hospital is in course of preparation.

(d) Havelock Mine Hospital, Emlembe.

Figures relating to members of the General Native Population treated at the Mine Hospital are given in the following table:-

	1946	1947	1948	1949	1950	1951	1952
Admissions	141	113	81	189	175	68	89
Out-patients (New cases)	333	47	79	79	88	559	546
Re-attendances	2285	128	147	595	124	535	1239
Daily average no. of In-patients	3.3	3.4	2.7	4.18	5.0	1.35	1.9

(e) Arthur Matthews Methodist Hospital, Mahamba.

This new thirty-bedded combined hospital was formally opened on the 26th July, and was granted a Government subsidy of £840 per annum with effect from 1st April 1952. The following table gives an outline of the work performed at the hospital since 1st January, 1952:

	European	African
Admissions	25	314
In-patient days	134	2384
Confinements	-	11
Deaths	-	10
Operations (major)	-	3
Operations (minor)	1	17
Out-patients (new cases)	71	1744
Out-patients (re-attendances)	54	2679
Malaria Cases	-	-
Bilharzia cases	-	47

The staff consists of a Resident Medical Officer, an European Matron, three African Nurses, two probationer nurses and one Dispensary Assistant. The Mission has established clinics at Nyamane, Mashobeni South and Gege, which are visited at weekly intervals.

(f) Swaziland Irrigation Scheme (C.D.C).

This organisation appointed a full-time Medical Officer in December 1951, and information relating to the cases treated during 1952 are tabulated below:-

	Europeans		Africans		Totals
	E	GNP	E	GNP	
Admissions	109	8	258	12	387
In-patient days	501	31	1343	186	2061
Confinements	9	-	28	-	37
Deaths	1	-	12	-	13
Out-patients (new cases)	403	62	3946	315	4726
Out-patients (re-attendances)	630	122	5000	437	6189
Operations	21	2	109	25	157
Malaria Cases	1	1	7	2	11
Bilharziasis	1	-	79	3	83

(Note: E = Employees and dependents
GNP = Non-Employees)

(g) Dispensaries (Health Centres).

The number of cases treated at the various Dispensaries is given below:-

Government Health Centres.

Dispensary	In-patients	Out-Patients			
		New Cases		Re-attendances	
		E	N.E.	E	N.E.
Horo	-	10	3255	0	606
Hebron	-	-	766	-	409
Government Farm	-	2	1419	-	515
Goedgegun	-	427	3299	256	1513
Mhlotsheni	-	34	2453	15	1895
Hluti	-	224	1511	16	1285
Lesters		1	473	-	223
Sipofaneni	-	11	[illegible]	9	1580
St. Philip's	-	-	2714	-	2182
Our Lady of Sorrows	-	12	2730	6	330
Lubuli-Gollel	-	-	1354	-	2122
	-	721	[illegible]	302	12660
Mankaiana Cottage Hospital *	835	56	6119	98	3225

("E" = Europeans, "N.E." = Non-Europeans, "*" = figures additional to those shown in the Return of Diseases for Government Hospitals (Appendix I).

The new Health Centre at Lesters, in the Native Land Settlement Area, near Herefords, which was erected and equipped as a charge against Colonial Development and Welfare Fund Scheme No. D. 1505 "Extension of Medical Services in the Lowveld" was opened in September, and the Swazi National Treasury has assumed responsibility for its staffing and maintenance.

The centre is supervised by the Medical Officer (Health), who visits it at monthly intervals. A site has been selected at Lubuli in the Hlatikulu District, for the construction of a similar centre to serve the needs of that area, and this building will be erected during 1953.

The records of attendances at Health Centres during the past seven years are shown in the following tables:-

(i) Health Centres (General).

Year	New Out-patients	Re-attendances	Total attendances	Confinements
1946	15201	4228	19429	68
1947	14109	8151	22260	47
1948	15347	14235	29582	34
1949	16893	12110	29003	38
1950	19285	13864	33199	34
1951	22214	17787	40001	67
1952	22353	12962	35315 x	43

(x Note - Mahamba figures (2916) not included).

(ii) Mankaiana Cottage Hospital (16 beds).

Year	Admissions	Out-Patients					Confinements
		New Cases		Re-attendances		Total attendances	
		E	N.E.	E	N.E.		
1946	957	25	7244	10	3135	10414	122
1947	734	36	5693	19	3999	9747	100
1948	762	43	6727	47	2853	9670	94
1949	736	38	7289	59	3030	10416	114
1950	797	29	7147	54	3966	11196	110
1951	829	61	6287	83	3400	9831	95
1952	835	56	6119	98	3225	9498	98

The average number of in-patients per day at this institution was 30.0, as compared with 27.7 in 1951, which was the highest figure previously recorded.

(iii) Cases treated at Nazarene Mission Health Centres.

Health Centre		Out-Patients			
		New Cases		Re-attendances	
		E	N.E.	E	N.E.
Stegi	x	-	4887	-	2812
Endingeni	x	-	1328	-	4288
Pigg's Peak	x	48	1508	38	2438
Mliba	x	-	817	-	1162
Mafuteni		-	368	-	2267
Bhekinkosi		-	313	-	797
Balegane		-	622	-	863
Malinda		-	609	-	589
Ebenezer (Pilgrim Holiness Church)		-	1475	-	252
Totals		48	11927	38	15468

"x" = Subsidized by Government.

The total attendances at Nazarene Mission Health Centres was 27481, as compared with 30320 in 1951.

(iv) District Surgeon, Stegi.

The cases treated by the District Surgeon, Stegi, are tabulated below:-

	New Cases	Re-attendances
European Officials	93	51
European General Population	210	129
African Officials	684	433
General Native Population	4058	939
Eurafricans	210	101
Totals 1952	5255	1653
Totals 1951	4084	4923

VI. PRISONS.

The prisons at Mbabane, Bremersdorp, and Hlatikulu, were regularly inspected at weekly intervals by the District Medical Officers. The health of prisoners has been satisfactory, and no epidemics, deficiency or institutional diseases occurred.

VII. SCIENTIFIC.

Details of the laboratory work carried out at various centres in the territory are given in the following table:-

	Public Health Laboratory Bremersdorp	Mbabane Hospital	Hlatikulu Hospital	Raleigh Fitkin Memorial Hospital
Blood films	3026	313	179	133
Total Blood Counts	116	-	360	1
Throat Swab Cultures (C. Diphtheriae)	58	-	-	-
Bacteriological Smears	-	2620	211	3
Faeces	-	794	349	74
Urines	121	2802	1239	3105
Sputa	-	686	386	159
Serological tests for Syphilis	5403	-	-	-
Identification of adult mosquitos	94	-	-	-
Identification of mosquito larvae	760	-	-	-
Identification of snails	1250	-	-	-
Biochemical tests	38	-	-	-
Blood and stool cultures	159	-	-	-
Agglutination tests	244	-	-	-
Cerebrospinal fluids	-	-	-	-
Sedimentation rates	24	-	338	-
Unspecified	-	-	127	- -
Totals 1952	11293	7215	3189	3475
Totals 1951	14077	5867	2066	4760
Totals 1950	14770	4279	1746	5981
Totals 1949	13688	3619	1220	4919
Totals 1948	15641	2865	1813	4912
Totals 1947	16428	2015	1427	3903

The reduction in the number of specimens examined at the Public Health Laboratory, as compared with previous years, was due to a curtailment of the demands of local hospitals while the Malaria Medical Officer was absent from the territory on leave, and no relief staff was available.

VIII. (a) MEDICO-LEGAL WORK, ETC.

	Mbabane Pigg's Peak & Mankaiana District	Hlatikulu District	Manzini & Stegi District	Total
Post-Mortem Examinations	31	25	24	80
Examinations for Assault, etc	31	107	91	229
Examinations for Tax Exemption	85	156	127	368
Totals	147	288	242	677

(b) Radiological Examinations.

	Mbabane		Hlatikulu		Raleigh Fitkin Memorial Hospital		Total
	E	A	E	A	E	A	
Screenings	-	6	19	95	2	1	123
Radiographs	151	525	33	151	105	436	1401
Total	151	531	52	246	107	437	1524

There has been a considerable (20.1%) increase in the number of radiological examinations carried out at the District Hospitals.

In conclusion, I should like to express my appreciation of the loyal and efficient manner in which all members of the staff of the Department carried out their duties during 1952.

J.C.J. CALLANAN

DIRECTOR OF MEDICAL SERVICES.

ANNUAL REPORT 1952.

PUBLIC HEALTH LABORATORY, BREMERSDORP.

A. GENERAL.

During the year the Malaria Medical Officer left for six months (May to November) overseas leave. In his absence it was arranged that the laboratory work be curtailed to the barest minimum, and be carried out by Miss Bredell, B.Sc.

During February, Dr. M.A.C. Dowling, Officer in Charge of the Mauritius Malaria Eradication Scheme, paid a week's visit to the territory. All problems arising out of present-day malaria control measures were discussed, and Dr. Dowling was taken to many of the native areas for investigation. It is felt that visits by Malariologists working in neighbouring countries are of great value to this Department.

B. MALARIA.

Climatic Conditions: Rainfall as recorded at the Bremersdorp meteorological station is shown in the following table:-

TABLE I: MONTHLY RAINFALL (inches) 1951 AND 1952.

	1951	1952
January	3.4	11.7
February	2.9	2.5
March	3.4	2.7
April	5.0	1.0
May	1.5	1.8
June	0.3	1.8
July	0.2	1.7
August	5.0	0.1
September	0.7	0.2
October	5.0	2.5
November	1.5	5.2
December	2.4	8.4
	31.3	38.6

The early summer rains in October 1951 (5"), also the rather heavy rainfall during January 1952 (11.7") favoured malaria-vector breeding, and considerable numbers of A. gambiae in the larval stage were collected in many bushveld areas. Particularly abundant breeding of A. gambiae was found in all water collections on the property of the Swaziland Irrigation Scheme, especially in the close vicinity of the rice fields. The conditions on this property caused great concern to the Department, since there was every danger that the vectors would spread into adjoining native areas under control. Intensified malaria control measures, consisting not only of regular hut-spraying with B.H.C (10% gamma) but also of anti-larval work using a dilution of 1/150 D.D.T emulsion (27½%) were advised, and were carried out by the management.

Rainfall during the latter part of the season was limited, and did not favour excessive nor wide-spread breeding. The season can be regarded as a normal year of transmission.

Control. During the 1951/52 transmission season malaria control work was again greatly extended, and a total of 45,780 huts were treated with a residual insecticide. Of this total, 31,900 huts received a second spray during the month of February, and a further 3,500 huts received a third treatment during April. The number of hut-spray treatments thus totalled 81,180. The "re-sprays" were considered necessary as the insecticide (wettable powder B.H.C 10% gamma content) used has a somewhat shorter residual effect than D.D.T. It is estimated that approximately

100,000 persons have been protected, a population representing all accessible malarious areas in the territory.

As in previous year, regular check-testing of huts by a knock-down spray (Pyagra) was done throughout the season. In spite of the heavy breeding of A. gambiae (larval findings), no adult mosquitoes were recovered from human habitations throughout the season, with the exception of a small pocket north of the Komati River adjoining the rice-paddies at Border Gate, and in some huts at the Swaziland Irrigation Scheme.

This rather peculiar discrepancy of finding an abundance of A. gambiae in the larval stage, and not in adult form inside the houses, can only be attributed to the fact that the adult has modified its habitat by resting in places other than human dwellings. Whether at the same time the adult has also changed its homophilic habits, is an important question, and the present concept of the ecology of this mosquito warrants thorough investigation.

In addition to the rural control, intensive oiling with D.D.T emulsion 1/150 was carried out in the township of Bremersdorp, and house-spraying at two monthly intervals was done. House-spraying (European and native quarters) was also carried out once during the season at Stegi and Mankaiana.

Incidence. In consequence of the almost complete eradication of malaria vectors from native huts, the malaria incidence among the rural population again showed a remarkable decrease. This was especially noticeable in those bushveld areas where control had been in operation for two or more seasons.

In order to ascertain the incidence of malaria amongst the rural population, bloods of 2,906 children were examined in the laboratory throughout the malaria season. The results of these examinations were classified according to the period over which the area concerned had been under control (two or more years, one year only). This form of classification was decided upon as, according to our experience, a period of one to two years will lapse before the indigenous native child rids itself of parasites from a malaria infection (assuming no further exposure to infection). A relatively high parasite-rate amongst children living in an area controlled for the first year, would thus not necessarily infer inefficacy of the control measures.

As most districts had been under control over two or more years, the number of bloods here (2,218) naturally far exceeded that number representing first year control areas only (688).

The following table represents the malaria incidence as judged by the presence of parasites in the peripheral blood:-

TABLE II - MALARIA INCIDENCE - TRANSMISSION SEASON 1951/52.

	Areas controlled two or more years. (A)			Areas controlled one year only. (B)		
Age Group (years)	Total	Positive	% Positive	Total	Positive	%Positive
0 - 1	523.....	2.....	0.4%	112.....	10	8.9%
1 - 6	1161.....	31.....	2.7%	409.....	99	24.2%
7 -15	534.....	15.....	2.8%	167.....	35	21.0%
	2218	48	2.1%	688	144	20.9%

As will be seen from the above table, in group (A) a total of 48 out of 2,218 cases showed parasites in the peripheral blood. Of these 48, only 3 were heavy parasitic infestations. In all other 45 positive

cases either only an occasional gametocyte was found in the thick-drop, or a few trophozoites often in degenerate form. It is right to assume that the majority of these 48 cases were not recently acquired infections.

In those areas (group (B)) where malaria control measures were done for the first year only, a total of 144 out of 688 examinations showed parasites in the peripheral blood. Of these 144 cases, 31 showed heavy infestations.

The overall parasite-rate of children in group (A) was 2.1%, as compared with that in group (B) where it was 20.9%.

If one remembers that in the pre-control era parasite-rates amongst children varied between 50% and 80% during the transmission season, the reduction to just over 2% must be regarded as a considerable achievement. It is hoped that, by the continuation of malaria control measures in future years, the parasite load amongst the children of this territory will be further reduced, thus rendering the malaria vector, even if total eradication is not possible, less liable to become infected.

A point of great importance is that the infants in endemic malarious areas are now practically protected from infection, as can be seen from the very low figure (0 - 1 age group, 2 positives out of 523 cases) of parasite-positive cases. This should bear some influence in reducing the up-to-date high infant mortality-rate in the territory.

It would be of interest to compare figures of haemoglobin value and spleen enlargement in children of the now controlled areas with those in children of pre-control days. A survey in this connection is intended.

The absolute figures of parasite-positive cases recorded in our laboratory over the years 1946 to 1952 are set out in the following table:-

TABLE III - MALARIA CASE INCIDENCE.

1946	6850
1947	2365
1948	3210
1949	2444
1950	1295
1951	446
1952	207

These figures include all cases from the field, as well as those bloods submitted from local hospitals and health-centres.

Expenditure on Malaria Control - 1952. An analysis of the cost of the malaria control work covering the territory during the year 1952 is presented below:-

Total expenditure on insecticides, equipment, labour and transport (excluding personal emoluments of permanent staff)	£3250
Cost per hut treatment	9.6d
Cost per head of protected persons (approx)	7d
Cost per head of total native population (approx)	4d.

C. LABORATORY.

During the period May to November arrangements were made that all local Hospitals and Health Centres curtail their number of specimens sent

to the Laboratory to the barest minimum, thus enabling the routine work to be carried out single-handed during the absence on leave of the Malaria Medical Officer. In accordance, the number of specimens dealt with over the year shows a decrease of 3.238 in comparison with 1951 figure. The total of specimens examined during 1952 was 6.163 in comparison to 9.401 in the previous year.

The following Table (No. IV) shows detailed statistics of the laboratory examinations carried out during the year:-

TABLE IV: ROUTINE LABORATORY EXAMINATIONS - 1952.
As compared with those of previous year 1951.

	1951	1952
Serological tests for Syphilis	8.473	5.403
Agglutination Tests (Widal, Weil-Felix, Brucellosis)	309	244
Diphtheria (Throat-swab cultures)	72	58
Blood, Stool and Urine Cultures	172	159
Full Blood Counts and Differential Blood Counts	93	116
Sedimentation Rates	-	24
Biochemical Tests	40	38
Bacteriological Smears, Stools and Urines	242	121
Total	9.401	6.163

As evident from the above figures the main reduction in routine work was due to the appreciable decrease in serological examination for Syphilis.

The following Table (No. V) represents the portion in which specimens were received from the various Hospitals and Health Centres:-

TABLE V: HOSPITAL SPECIMENS - 1952.

	1952		1951	
Health Centres	1.671 =	26.8%	2.908	=31.0%
Bremersdorp	1.960 =	31.7%	2.550	=27.1%
Mbabane	1.339 =	21.8%	1.619	=17.2%
Hlatikulu	674 =	11.4%	1.086	=11.5%
Mahamba	186 =	3.0%	-	-
Laboratory	187 =	3.0%	905	=9.7%
Mankaiana	146 =	2.3%	333	=3.5%
Total	6.163	100.0%	9.401	100.0%

Mahamba has been recorded separately for the first time as a Medical Officer is now in charge of this station. In the previous year specimens received from Mahamba were recorded under Health Centres.

The last Table (No. VI) represents the total laboratory examinations carried out in connection with Malaria control and Bilharzia work:-

TABLE VI: MALARIA/BILHARZIA LABORATORY EXAMINATIONS - 1952.
As compared with those of previous year, 1951.

Blood-slide Examinations:	1952	1951
(a) received from Hospitals and Health Centres	120	437
(b) received from Field Staff	2.906	2.504

TABLE VI (Continued).

	1952	1951
Entomological Examinations:		
(a) identification of adult mosquitoes	94	125
(b) identification of mosquito larvae	760	510
(c) identification of snails	1.250	1.100
	5.130	4.676

Syphilis. A total of 5.403 specimens were submitted for examination. Of these 284 were haemolysed and unsuitable for examination. Of the remaining 5.119 specimens 1.362 or 26.6% gave a positive reaction and 450 or 8.8% gave a doubtful reaction, positives and doubtful thus totalling 35.4%. These figures are slightly lighter than in the previous year the respective figures being: positives 25.1% doubtfuls, 7%, and total 32.1%.

Enteric Group of Fevers: Of 244 agglutination tests carried out a total of 76 was found to be positive for either B. typhosus H or B. typhosus O or both. Only one serum gave a diagnostic titre of B. paratyphosus A (confirmed by culture).

Of the 159 cultures examined 63 gave a positive result of B. typhosus and one of B. paratyphosus.

Diphtheria: 58 Throat swabs were submitted for culture during the year. Of these 10 were found to be positive for C. diphtheria.

In conclusion, I wish to express my appreciation of the work Miss Bredell, B.Sc., has done throughout the year and specially during my absence on leave. Further I want to place on record the assistance the Health Inspector, Mr. G.J. van Eeden, has given in supervising the field work of the malaria control.

GOVERNMENT HOSPITALS.

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1952.

Intermediate List No.	Detailed list No.	Group Causes	Cases remaining in hospital from previous year.		Total Admission		Total Deaths		Total Cases Treated		Remaining in hospital at end of year.		Out-Patients.	
			E	A	E	A	E	A	E	A	E	A	E	A
A 1	001-008	Tuberculosis of respiratory system	-	4	-	61	-	10		51	-	14	-	23
A 2	010	Tuberculosis of meninges and central nervous system				2	-	1		2		-	-	-
A 3	011	Tuberculosis of intestines, peritoneum & mesenteric glands				4	-	1		4		-	-	1
A 4	012,013	Tuberculosis of bones and joints				21	-	1		17	-	4	1	6
A 5	014-019	Tuberculosis, all other forms	-	1	-	22	-	1		18	-	5	-	10
A 6	020	Congenital syphilis				58	-	1		56	-	2	-	128
A 7	021	Early syphilis	-	9	-	164	-	-		170	-	33	1	497
A 8	024	Tabes dorsalis											1	-
A 10	022,023 026-029	All other syphilis	-	1	-	17	-			17	-	1	1	187
A 11	030-035	Gonococcal infection			1	97	-	-	1	92	-	5	23	691
A 12	040	Typhoid fever	-	4	1	51	-	5	1	50	-	5	-	9
Total carried forward			-	19	2	497	0	20	2	477	-	38	27	1552

E = Europeans
A = Africans.

Intermediate List No.	Detailed list no.	Group Causes	Cases remaining in hospital from previous year.		Total Admission		Total Deaths		Total Cases Treated		Remaining in hospital at end of year		Out-Patients	
			E	A	E	A	E	A	E	A	E	A	E	A
Total Brought Forward			-	19	2	497	0	20	2	477	-	38	27	1552
A 13	041,042	Paratyphoid fever and other Salmonella infections				1				1		-	-	-
A 16(a)	045	Bacillary dysentery			4	67	-	1	4	63	-	4	35	169
16(b)	046	Amoebiasis	-	7	4	189	-	6	4	191	-	5	16	85
16(c)	047,048	Other unspecified forms of dysentery				1				1	-			
A 18	051	Streptococcal sore throat				1				1	-			
A 19	052	Erysipelas				5		1	-	5	-			
A 20	053	Septicaemia and pyaemia				1		1	-	1	-			
A 21	055	Diphtheria				2				2	-			
A 22	056	Whooping cough	-	1	2	46	-	3	2	47	-	-	20	214
A 25	060	Leprosy				1				1	-			5
A 29	082	Acute infectious encephalitis				1				1				
A 32	085	Measles			1	23	-	-	1	20	-	3	21	32
A 34	092	Infectious hepatitis	-	1	-	7				8		-	2	
A 36(c)	104	Tick borne typhus			1	-	-	-	1	-	-	-	7	
A 37(b)	111	Malariae malaria (quartan)				1				1	-	-	-	
37(c)	112	Falciparum malaria (malignant tertian)				27		2		11	-	16	2	
Total carried forward			-	28	14	870	-	34	14	831	-	66	130	2057

Intermediate List No.	Detailed List No.	Group Causes	Cases remaining in hospital from previous year		Total Admission		Total Deaths		Total Cases Treated		Remaining in hospital at end of year		Out-Patients	
			E	A	E	A	E	A	E	A	E	A	E	A
		Total brought forward	-	28	14	870	-	34	14	831	-	66	130	2057
A 37(e)	113,114 116,117	Other and unspecified forms of malaria			2	16	-	-	2	15	-	1	4	50
A 38(a)	123.0	Schistosomiasis intestinal (S.mansoni)				2				2	-	-	-	
(b)	123.1	Schistosomiasis vesical (S.haematobium)	-	2		80		1		76	-	6	2	246
A 40(a)	127	Onchocerciasis				1				1	-	-	-	
A 41	129	Ankylostomiasis				2				2	-	-	-	
A 42(a)	126	Tapeworm (infestation) and other cestoda infestations				20				20	-	-	10	441
42(b)	130.0	Ascariasis	-	1		15		1		16	-	-	-	205
A 43(a)	037	Lymphogranuloma venereum				1				1	-	-	1	13
(b)	038	Granuloma inguinale, venereal				1				-	-	1	-	1
(h)	087	Chickenpox				10				10	-	-	7	40
(n)	131	Dermatophytosis				6				6	-	-	9	
(•)	135	Scabies				23				21	-	2	3	300
(p)	036,054 059,063 064,070 074,086 088,096.6 096.8 098.9,122 132-134 136-138	All other diseases classified as infective and parasitic	-		2	14	-	1	2	14	-	-	32	439
A 47	152-153	Malignant neoplasm of intestine except rectum				2				2				
A 48	154	Malignant neoplasm of rectum	-		1	-	1	-	1	-	-	-		
		Total carried forward	-	31	19	1063	1	37	19	1017	-	76	198	3792

Intermediate List No.	Detailed List No.	Group Causes	Cases remaining in hospital from previous year.		Total Admission		Total Deaths		Total Cases Treated		Remaining in hospital at end of year		Out-Patients	
			E	A	E	A	E	A	E	A	E	A	E	A
		Total brought forward	-	31	19	1063	1	37	19	1017	-	76	198	3792
A 51	170	Malignant neoplasm of breast				2				2				
A 52	171	Malignant neoplasm of cervix uteri				5	-	1		5				
A 53	172-174	Malignant neoplasm of other & unspecified parts of uterus				1				-		1		
A 55	190-191	Malignant neoplasm of skin										-	2	
A 56	196,197	Malignant neoplasm of bone & connective tissue				1				1		-		
A 57	155-160 164,165 175,176 178-181 192-195 198,199	Malignant neoplasm of all other and unspecified sites				6	-	2		6		-		
A 58	204	Leukaemia and aleukaemia				2				2		-		
A 59	200-203 205	Lymphosarcoma and other neoplasms of lymphatic and haematopoietic system	-	2	-	1	-	1		3		-		
A 60	210-239	Benign neoplasms and neoplasms of unspecified nature	-	1		36				36	-	1	10	39
A 61	250,251	Nontoxic goitre				5				5		-	1	22
A 62	252	Thyrotoxicosis with or without goitre				3				3				12
A 63	260	Diabetes mellitus										-	1	-
A 64(a)	280	Beriberi				3		1	-	3		-	-	3
64(b)	281	Pellagra				17		1	-	17		-	-	11
64(c)	282	Scurvy				1				1				7
64(c)	283-286	Other deficiency states	-	1		74		9	-	73	-	2	1	31
		Total carried forward	-	35	19	1220	1	52	19	1174	-	80	213	3927

Intermediate List No.	Detailed List No.	Group Causes	Cases remaining in hospital from previous year		Total Admission		Total Deaths		Total Cases Treated		Remaining in hospital at end of year		Out-Patients	
			E	A	E	A	E	A	E	A	E	A	E	A
		Total brought forward	-	35	19	1220	1	52	19	1174	-	80	213	3927
A 65(a)	290	Pernicious and other hyperchromic anaemias				2				2	-	-	1	33
65(b)	291	Iron deficiency anaemia (Hyperchromic)				0				-	-	-	14	19
65(c)	292,293	Other specified and unspecified anaemias				6				6	-	-	19	96
A 66(a)	241	Asthma			1	12		1	1	12	-	-	6	68
66(b)	240 242-245 253,254 270-277 287-289 294-299	All other allergic disorders endocrine, metabolic and blood diseases				5		1	-	5	-	-	37	46
A 67	300,309	Psychoses			5	1		-	4	1	1	-		3
A 68	310-324 326	Psychoneuroses and disorders of personality				10				10	-	-	81	64
A 69	325	Mental deficiency				2		1	-	2				2
A 70	330-334	Vascular lesions affecting central nervous system			1	6		1	1	6	-	-		
A 71	340	Non-meningococcal meningitis				5		2	-	5				1
A 73	353	Epilepsy			2	4		-	2	4	-	-	1	25
A 74	370-379	Inflammatory diseases of eye	-	2		141				143			50	565
A 75	385	Cataract				3				3				19
A 76	387	Glaucoma				-				-			1	
77(a)	390	Otitis externa			1	14		-	1	14	-	-	104	166
77(b)	391-393	Otitis media and mastoiditis			4	39		-	4	37	-	2	31	220
A 78(c)	380-384 386,388 389	All other diseases and conditions of eye	-	2		16				17		1	19	79
		Total carried forward	-	39	33	1486	1	58	32	1436	1	83	577	5333

Intermediate List No.	Detailed List No.	Group Causes	Cases remaining in hospital from previous year		Total Admission		Total Deaths		Total Cases Treated		Remaining in hospital at end of year		Out-Patients	
			E	A	E	A	E	A	E	A	E	A	E	A
		Total brought forward	-	39	33	1486	1	58	32	1436	1	83	577	5333
A 78(b)	341,344 350,352 354,357 360-369 395,398	All other diseases of the nervous system and sense organs	-	1	3	30		-	3	28	-	3	52	249
A 79	400-402	Rheumatic fever	-	2	2	13		1	2	15	-	-	2	42
A 80	410-416	Chronic rheumatic heart disease	-	1		12		1	-	13			1	5
A 81	420-422	Arteriosclerotic and degenerative heart disease			2	19	2	3	2	17	-	2	5	
A 82	430-434	Other diseases of heart				6				4		2	20	25
A 83	440-443	Hypertension with heart disease	-		1			-	1		-	0	8	
A 84	444-447	Hypertension without mention of heart				1				1			13	
A 85	450-456	Diseases of arteries				2				2	-	-	-	3
A 86	460-468	Other diseases of circulatory system			3	36		1	3	35	-	1	52	67
A 87	470-475	Acute upper respiratory infections			10	42			10	42	-	-	253	720
A 88	480-483	Influenza			8	110		2	8	108	-	2	162	664
A 89	490	Lobar pneumonia	-	1	2	128		6	2	127	-	2	2	53
A 90	491	Bronchopneumonia	-	1	8	142		8	8	141	-	2	9	112
A 91	492-493	Primary atypical, other and unspecified pneumonia	-	1	-	6				6	-	1	1	2
A 92	500	Acute bronchitis	-	2	4	110		1	4	108	-	4	122	1723
A 93	501,502	Bronchitis, chronic and unqualified	-	1	-	41		[illegible]		141	-	1	3	159
A 94	510	Hypertrophy of tonsils and adenoids			8	47			8	47	-	-	29	151
A 95	518,521	Empyema and abscess of lung				3		1	-	3	-	-	-	-
		Total carried forward	-	49	84	2234	3	82	113	2154	1	103	1311	9308

Intermediate List No.	Detailed List No.	Group Causes	Cases remaining in hospital from previous year		Total Admission		Total Deaths		Total Cases Treated		Remaining in hospital at end of year		Out-Patients	
			E	A	E	A	E	A	E	A	E	A	E	A
		Total brought forward	-	49	84	2234	3	82	113	2154	1	103	1311	9308
A 96	519	Pleurisy			2	18			1	18	1	-	3	55
A 97(a)	523	Pneumoconiosis				16				16	-	-	1	8
(b)	511-517 520-522 524-527	All other respiratory diseases			3	17			3	17	-	-	26	108
A 98(a)	530	Dental caries			1	21			1	21	-	-	135	1018
(b)	531-535	All other diseases of teeth & supporting structures			3	35		2	3	35	-	-	23	290
A 99	540	Ulcer of stomach			4	-		-	4	-	-	-	19	
A 100	541	Ulcer of duodenum										-	10	
A 101	543	Gastritis and duodenitis	2	-	6	19		-	8	19	-	-	46	565
A 102	550-553	Appendicitis			21	13	1	-	21	12	-	1	26	22
A 103	560-561 570	Intestinal obstruction and hernia			2	15		2	2	15	-	-	10	14
A 104(a)	571.0	Gastro-enteritis and colitis between 4 weeks and 2 years	-	3	1	143		3	1	141	-	5	68	710
(b)	571.1	Gastro-enteritis and colitis ages 2 years & over	-	1	7	37		-	7	37	-	1	105	486
(c)	572	Chronic enteritis and ulcerative colitis			1	1		-	1	1	-	-	1	1
A 105	581	Cirrhosis of liver			1	-		-	1	-	-	-		
A 106	584,585	Cholelithiasis and cholecystitis			3	2		-	3	2	-	-	22	10
A 107	536-539 542,544 545 573-580 582,583 586,587	Other diseases of digestive system			7	28		1	6	28	1	-	36	535
		Total carried forward	2	53	146	2599	4	90	175	2516	3	110	1842	13130

Intermediate List No.	Detailed List No.	Group Causes	Cases remaining in hospital from previous year		Total Admission		Total Deaths		Total Cases Treated		Remaining in Hospital at end of year		Out-Patients	
			E	A	E	A	E	A	E	A	E	A	E	A
		Total brought forward	2	53	146	2599	4	90	175	2516	3	110	1842	13130
A 108	590	Acute nephritis	-	1	1	7		2	1	8	-	-	-	13
A 109	591-594	Chronic, other and unspecified nephritis				3	-			2	-	1	-	
A 110	600	Infections of kidney			2	6		-	2	6	-	-	2	26
A 111	602,604	Calculi of urinary system				2				2		-		1
A 112	610	Hyperplasia of prostate			2	4		1	2	4	-	-	1	13
A 113	620,621	Diseases of breast				12				12	-		1	20
A 114(a)	613	Hydrocele				5	-			5	-	-	10	27
114(b)	634	Disorders ofmenstruation			6	23	-		6	22	-	1	12	359
114(c)	601,603 605-609 611,612 614-617 622-633 635-637	All other diseases of the genito-urinary system			7	112	-		7	108	-	4	117	741
A 115	640,641 681,682 684	Sepsis of pregnancy, childbirth & the puerperium				8	-	2		8	-			1
A 116	642,652 685,686	Toxaemias of pregnancy & the puerperium			4	7	-		4	6	-	1		
A 117	643,644 670-672	Haemorrhage of pregnancy and child-birth				1	-			1	-			9
A 118	650	Abortion without mention of sepsis or Toxaemia			6	33	-		6	33	-	-	1	26
A 119	651	Abortion with sepsis				2	-			2	-			2
A 120(a)	645-649 673-680 683 687-689	Other complications of pregnancy childbirth and the puerperium	-	1	4	53	-	2	4	52	-	2		13
		Total carried forward	2	55	178	2877	4	97	207	2787	3	119	1986	14381

Intermediate List no.	Detailed List No.	Group Causes	Cases remaining in hospital from previous year		Total Admission		Total Deaths		Total Cases Treated		Remaining in hospital at end of year		Out-Patients	
			E	A	E	A	E	A	E	A	E	A	E	A
		Total brought forward	2	55	178	2877	4	97	207	2787	3	119	1986	14381
A 120(b)	660	Delivery without complications	1	13	40	341	-	1	39	334	2	20		571
A 121	690-698	Infections of skin and subcutaneous tissue	-	1	9	177	-		9	173	-	5	234	353
A 122	720-725	Arthritis and spondylitis			1	25	-		1	24	-	1	11	174
A 123	726,727	Muscular rheumatism & rheumatism unspecified	-	1	-	14	-			15	-		23	336
A 124	730	Osteomyelitis and periostitis	-	1	2	28	-		2	28	-	1	1	21
A 125	737 745-749	Ankylosis and acquired musculoskeletal deformities	-	2	2	16	-		2	17	-	1		
A 126(a)	715	Chronic ulcer of skin (including tropical ulcer)				2	-			2	-		4	12
126(b)	700-714 716	All other diseases of the skin	-	7		33	-			40	-		85	351
126(c)	731-736 738-744	All other diseases of musculoskeletal system			3	41	-		3	39	-	2	115	30
A 128	754	Congenital malformations of circulatory system				1	-			1	-			
A 129	750,752 753 755-759	All other congenital malformations			2	8	-		2	7	-	1	3	4
A 132(a)	764	Diarrhoea of newborn (under 4 weeks)												3
(b)	765	Ophthalmia neonatorum				3	-			3	-			1
(c)	763,766-768	Other infections of new born				1	-			1	-	-	1	
A 134	769 771,772	All other defined diseases of early infancy	-	3	-	4	-	4		7	-	-	3	74
A 135	773-776	Ill-defined diseases peculiar to early infancy and immaturity unqualified				23		5		23	-	-	-	10
A 136	794	Senility without mention of psychosis				3		2		3	-	-	-	2
		Total carried forward	3	83	237	3597	4	109	265	3505	5	150	2466	16323

Intermediate List No.	Detailed List No.	Group Causes	Cases remaining in Hospital from previous year		Total Admission		Total Deaths		Total Cases Treated		Remaining in hospital at end of year		Out-Patients	
			E	A	E	A	E	A	E	A	E	A	E	A
		Total brought forward	3	83	237	3597	4	109	265	3505	5	150	2466	16323
A 137(a)	788.8	Pyrexia of unknown origin			2	11		1	2	11	-	-	4	5
(b)	793 642,652	Observation without need for further medical care				13		1	-	13		-	447	369
(c)	780-787 788.1-788.7 788.9 789-792 795	All other ill-defined causes of morbidity	-	3		2				5	-	-	3	738
		"E" CODE ALTERNATIVE CLASSIFICATION OF ACCIDENTS, POISONINGS, AND VIOLENCE (EXTERNAL CAUSE)												
AE138	E810-E835	Motor vehicle accidents			8	27		3	8	24	-	3	7	8
AE139	E800-E802 E840-E866	Other transport accidents			1	14		-	1	14	-	-	-	6
AE140	E870-E895	Accidental poisoning			4	7		-	4	7	-	-	-	2
AE141	E900-E904	Accidental falls			7	137		-	7	131	-	6	104	286
AE142	E612	Accident caused by machinery	-	1	1	31		-	1	29	-	3	14	41
AE143	E916	Accident caused by fire and explosion of combustible material				43		4	-	38	-	5	3	56
AE144	E917,E918	Accident caused by hot substance, corrosive liquid, steam, and radiation	-	8		32				38	-	2	2	80
AE145	E919	Accident caused by firearm				4		1	-	4	-	-	-	
AE146	E929	Accidental drowning and submersion												3
AE147	E910,E915 E913-E915 E920-E928 E930-E965	All Other accidental causes	-	16	2	78		-	2	91	-	3	5	369
		Total carried forward	3	111	262	3996	4	119	290	3910	5	172	3055	18286

Intermediate List No.	Detailed List No.	Group Causes	Cases remaining in hospital from previous year.		Total Admission		Total Deaths		Total Cases Treated		Remaining in hospital at end of year		Out-Patients	
			E	A	E	A	E	A	E	A	E	A	E	A
		Total brought forward	3	111	262	3996	4	119	260	3834	5	173	3055	18276
AE148	E970-E979	Suicide and self-inflicted injury			4	55		1	4	53	-	3	50	68
AE149	E980-E985	Homicide and injury purposely inflicted by other persons (not in war)				140		2	-	138	-	2	4	132
AE150	E990-E999	Injury resulting from operations of war	-											
		GRAND TOTAL	3	111	266	4191	4	122	264	4125	5	177	3109	18476
		ATTENDANTS		7	3	535	-	-	3	525		17	-	
		RE-ATTENDANCES											14586	12537
		"N" CODE ALTERNATIVE CLASSIFICATION OF ACCIDENTS, POISONINGS, AND VIOLENCE (NATURE OF INJURY).												
AN138	N800-N804	Fracture of skull	-	2	2	19	-	3	2	22	-	-	-	5
AN139	N805-N809	Fracture of spine and trunk	-	-	3	7	-	-	3	7	-	-	4	5
AN140	N810-N829	Fracture of limbs	-	3	3	107		-	3	103	-	7	7	40
AN141	N830-N839	Dislocation without fracture	-	-	1	6		-	1	6	-	-	1	17
AN142	N840-N848	Sprains and strains of joints and adjacent muscles	-	1	3	22		-	3	22	-	1	8	171
AN143	N850-N856	Head injury (excluding fracture)	-	3	-	26	-	1	-	29	-	-	-	3
AN144	N860-N869	Internal injury of chest, abdomen and pelvis			-	17	-	2	-	16	-	1	-	7
AN145	N870-N908	Laceration and open wounds	-	6	5	227	-	1	5	325	-	8	7	399

Intermediate List No.	Detailed List No	Group Causes	Cases remaining in hospital from previous year		Total Admission		Total Deaths		Total Cases Treated		Remaining in hospital at end of year		Out-Patients	
			E	A	E	A	E	A	E	A	E	A	E	A
AN146	N910-N929	Superficial injury, contusion and crushing with intact skin surface	-	1	5	27		-	5	17	-	-	11	83
AN147	N930-N936	Effects of foreign body entering through orifice			1	7		-	1	7				29
AN148	N940-N949	Burns	-	9	4	73	-	4	4	75	-	7	-	114
AN149	N960-N979	Effects of poisons		-	-	14	-	-	-	14	-	-	3	
AN150	N950-N959 N980-N999	All other and unspecified effects of external causes	-	-		16	-	-	-	14	-	2	-	38

APPENDIX II.

METEROLOGICAL OBSERVATIONS.

SWAZILAND 1952.

Station - Mbabane (Highveld).

Alt. 3,700 feet.

Month	Air Temperature °F				Rainfall	
	Mean Max	Mean Min	Actual Max	Actual Min	Total	No. of days.
January	72.0	55.9	89.0	44.0	6.66	12
February	73.7	60.5	80.0	55.0	6.52	17
March	72.9	58.8	85.0	54.0	3.69	12
April	69.7	56.1	80.0	48.0	3.01	10
May	65.9	50.4	82.0	42.0	2.38	7
June	62.4	45.6	75.0	40.0	2.41	7
July	62.1	46.3	74.0	37.0	2.63	8
August	67.4	48.5	80.0	40.0	0.31	3
September	70.7	49.1	88.0	36.0	0.40	5
October	75.7	52.2	89.5	43.0	4.68	12
November	76.1	51.5	89.6	42.0	8.13	19
December	72.7	56.0	86.9	48.2	10.39	23
Year	70.1	52.6	89.6	36.0	51.21	135
						Average 56.46

		Station - Bremersdorp (Middleveld)				
January	86.5	65.9	98.5	59.	11.65	12
February	83.1	68.7	91.0	60.5	2.54	12
March	85.6	63.8	96.0	60.0	2.73	11
April	81.6	59.1	90.5	50.5	0.99	10
May	77.2	53.3	95.5	41.5	1.78	6
June	73.8	50.4	84.5	44.5	1.68	6
July	71.5	49.5	84.0	40.0	1.72	9
August	78.0	52.7	92.0	41.0	0.07	3
September	80.5	53.8	94.0	40.5	0.17	6
October	82.3	60.1	98.0	33.0	2.49	9
November	81.5	61.1	94.1	53.0	5.15	20
December	80.6	62.6	93.2	57.2	8.35	19
	80.2	58.4	98.0	33.0	39.32	123
						Average 33.78

METEROLOGICAL OBSERVATIONS.

SWAZILAND 1952.

Station - Hlatikulu - (Highveld).

Alt. 3890 feet.

Month	Air Temperature °F				Rainfall	
	Mean Max	Mean Min	Actual Max	Actual Min	Total	No. of days
January	77.	59.	85.	52.	3.26	13
February	77.0	59.0	95.0	52.	7.73	14
March	77.0	58.0	89.0	54.0	1.41	6
April	71.6	55.5	82.0	49.0	2.5	9
May	67.8	51.3	84.0	41.0	0.68	6
June	65.3	48.8	72.0	40.0	1.51	4
July	62.8	48.1	74.0	39.0	2.04	6
August	68.7	50.0	82.0	44.0	0.08	1
September	70.6	50.0	84.0	38.0	0.18	3
October	73.9	54.3	89.0	49.0	1.79	9
November	69.8	59.0	95.0	52.0	9.43	15
December	71.6	58.1	102.2	48.2	7.81	16
Year	71.1	54.3	102.2	38.0	38.4	102

/Average 45.85

	Station - Stegi (Lowveld)					
January	84.5	62.2	94.8	56.2	3.75	8
February	80.01	62.2	88.9	57.5	3.53	7
March	82.5	61.7	93.0	57.5	3.42	3
April	79.9	58.7	90.5	53.4	0.45	3
May	75.01	54.6	93.0	46.0	0.58	4
June	70.8	52.7	78.3	47.8	1.41	4
July	67.8	53.0	79.7	47.5	1.66	4
August					No	Records
September	77.9	52.1	90.9	43.1	0.06	1
October	79.4	57.4	93.5	53.1	2.44	8
November	77.9	59.8	94.1	50.3	5.80	14
December	80.5	60.5	95.0	55.4	4.70	10
Year	71.4	52.2	94.8	43.1	-	-

/Average 29.61